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Architecture and place: a critical look at how they interact and influence each other through definition, creation, and representation

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Architecture and place: A critical look at how they interact and influence each other through definition, creation, and representation

by

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A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Architecture

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ABSTRACT

Architecture cannot float while confined in the Earth's atmosphere. It exists in a physical reality that humans interact with, experience, and inhabit.

Architecture is what helps us define place, and it can be influenced by place in return. An understanding of place — in all its aspects — is necessary to understand architecture. In this thesis I will examine how we define “place” and how we can create and represent it. The final goal is to explore the possibility of Place through architectural means and provoke discussion about the current relationship between architecture and Place.

I have separated my research into seven categories under three headings, each of which focus on a particular aspect of the relationship between place and architecture. The first group of categories falls under simply **(A) Place**. The sections are: (1) Architecture and Place, which defines ‘place’ as well as puts forward the initial assumptions on the importance of place to architecture; (2) Space and Cognition, which draws from previous research on how spatial perception affects the use of architectural space and the psychological effects of a particular place. This section also discusses the ability of Architecture to define Place.

Heading **(B) Place Creation** starts with (3) Defining Place, an in-depth analysis of St. Ivo's in Rome, Italy, from five different perspectives — Historical,

Experiential, Formal, Activist, and Symbolic – with the goal of determining how Place might define Architecture in contrast to the previous section; (4) Atmosphere, Light and the Senses, discusses how perception through the five senses currently is applied to architectural theory as well as comparisons of multiple distinctive approaches to architecture and the surrounding environment. Finally, (5) “Fake” Place, is a literary analysis of Italo Calvino’s *Invisible Cities* and the discussion of creating place without a physical reality.

The final heading discusses the implication of **(C) Place Representation**, through the section (6) Writing, which continues this discussion with a focus on how architecture and place are created and represented through media by non-architects and for non-architectural purposes; and (7) Images, analysis the methods of representation most commonly used by architects. Both sections will contain a brief look at the history of different media in architecture and their build-up into practices that are used today. How is Place currently represented in architecture? And should this be changed?

PRELIMINARY PAGES

Reasons for Thesis

I would like to introduce this project through a study of methods of representation as well as a thoroughly defined expression of what Place refers to. I want to examine not only the architecture, but also how it creates a reality one can inhabit — even within a two-dimensional space. This concept has become even more important in the present globalization of economy and inhabitation. Cultures must be comprehended on a global scale rather than a strictly local one and traditions are not restricted to individual geographic locale. They play a less dependent role in many places in the world now, or at the very least their role has changed to something less geographically specific. Instead, the world has started to heavily lean toward a heterogeneity that translates into a need for conflicting goals in architecture. Architecture must produce roots solid enough that it can connect people from extremely diverse circumstances while they inhabit a locally specific context.

How architecture is represented through its many media has always been a defining feature in how it is designed and built; which in turn always affects the space around it. Recently digital technologies have become the norm in the design

of architecture and what spaces are created. Not only do new programs allow for three-dimensional renderings of rooms and even complete cities, but digitalization has also changed how we look at and use other 2D and 3D means of representation. There are many different programs which can be used to either design or represent architecture. These Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) programs include Revit, AutoCAD, Solidworks, Adobe Design Suite, 3DS Max, Rhino, Keynote and many more.

Fully digital 3D models have become the most common source to use as a basis for creating 2D representations such as floor plans, or imagined perspectives. They allow for the creation of very precise layouts but tend not to leave a lot of flexibility where details are concerned. This means that these models almost always come across as somewhat static until fully cleaned up and perfected. Because of this they are not ideal for the initial development in architectural design where fluidity and speed are both important parts of the iterative design process. This leaves room for the continued importance of more traditional architectural media, including literature – something often overlooked in modern education.

Research Methodology

Research for this topic was conducted in several different ways. First it was important to establish a framework of information that included background on

different questions revolving around Place, its perception and its reproduction and representation; as well as how this perception effects the movement of people in a space and their impression upon leaving or entering it.

In the *Research* stage I used a mix of both broad and focused information gathering on subjects surrounding the identification of place. My priority is to create a working definition of “place” which will act as a standard to measure against later research. The definition will need to be written in a contemporary context as well so it can be applied to the possibility of future virtual development. This stage should also include more in-depth research into the current software/hardware that is being used to create and experience 3D environments as well as explore more traditional methods such as sketching, illustration, photography, and written accounts of experiences and cultures. This approach should provide a solid basis for the decisions that can drive representation, in particular the non-physical aspects of a place. Looking into multiple types of representation as well as their historic background will help to provide a concrete perspective on how we expect to experience place. To establish a foundation in architectural representations, background literary material includes books such as *Invisible Cities* by Italo Calvino and works by J.R.R. Tolkien which detail verbal or written descriptions. Scientific resources were used to back up suggested reactions to particular approaches on representation.

Through *experimentation* I propose the use of multiple examples that draw on the initial research — one part would be places I can visit, experienced, and recorded myself in comparison to a second set of places. This second set will be based on multi-media examples including a literary example that described a different specific place than the first. This second example will be one of the places described in the works of Italo Calvino and provide a clear reference between the ability of different types of representation to effectively allow someone to experience “place”. Both sets of examples will serve as a basis for learning the programs and processes that I have researched and as explanations of possible differences between methodologies. By using places which can be fully experienced I can find the similarities between my virtual representation and a real-world place as a way to judge continued work with the second research set. It also becomes a tangible comparison of my ability to represent both the physical and environmental aspects of a place.

Implementation is the final step of my process. It is the culmination of the first two phases. How to describe or capture a place, how it can be detailed so that it represents a true sense of culture and atmosphere, and how a person would experience it is answered in this phase and represented through description and analysis as well as original theoretical suggestions. I hope to portray the possibilities for architectural discussion through the many aspects of Place including how to create a particular atmosphere or sense of physical space for the people interacting with it.

I. INTRODUCTION TO PLACE

At its most expansive and fulfilling, Architecture is an art form. It is not only the art of creating spaces — because anyone can create enclosure — but it is the design and construction of *places*, and the foremost expression of a building is through inhabitation. Architecture cannot float while confined in the Earth's atmosphere. It exists in a physical reality that people experience, inhabit, and interact with. Architecture is what helps us define *Place*, and in return, it can be influenced by place. An understanding of place — in all its aspects — is necessary to understand architecture. In this thesis I will examine how we define Place¹ and how we can create and represent it. The final goal is to explore the possibility of creating a completely original place without a physical reality. What is important about this idea? By expanding this single question a series of important problems and necessary clarifications become apparent: Why is it important to study Place in terms of architecture and not just in terms of space? Why is Place a necessary factor when discussing the immateriality or physicality of architecture?

To answer this it is important to look at the differences between Place and Space. *Space* is the literal boundaries and dimensions we attribute to reality. It is a

¹ Throughout this body of work, references to 'place' as a formalized concept will be denoted with capitalization. A lower case version of the word 'place' indicates its use in a more colloquial sense. For example, when using the word place in reference to a physical location that something exists at. I.E: "The installation was *placed* within the courtyard of the building."

volume that can be expressed through mathematical terms. It is the relationship between two or more objects. Architecture is built in *space*. It encompasses space, and it defines space but, architecture also encompasses *place*. Place is not limited to just *space*. Architecture and Place are concepts that also encompass experience and created atmosphere, not just measurements and volumes. What drives my thesis is this difference between place and space.

In Architecture we often discuss what we call ‘place’ but is in reality ‘space’. There has always been a strong bond between space and the creation of architecture. In the university we are taught to design for a site where we have to pull out abstracted details from large scale maps and focus on numbers that support an artificial bond created between our imaginary building and its location. We visit the cities and take trips that bring us to “good architecture” which fits the site or stands out or in turn becomes a site for another more delicate installation. We judge, watch, and when we return home, we all remember what we went to see, but how does that add to our understanding of Place in Architecture as a profession? What do we truly need to consider at the end of it? The same wisps of understanding can fuel buildings that differ widely. It is the work of many 2D and 3D representation styles to explain ourselves, yet perception of a space and the factors that influence that perception are a basic requirement to understanding not only how to design for a space but how to design in such a way as to convince other people to hold similar notions of that Place.

[1] ARCHITECTURE AND PLACE

“Everything about this kitchen was typical of a traditional kitchen. There was nothing special about it. But, perhaps it was just the fact that it was so very much; so naturally, a kitchen that had imprinted its memory indelibly on my mind. [...] memories like these contain the deepest architectural experience that I know. They are the reservoirs of the architectural atmosphere and images I explore in my work as an architect.”

— Peter Zumthor, *Thinking Architecture* (1998, p.7-8)

There is a long history in the defining and study of place which dates back to the ancient Greeks and Romans. Traditionally, Place is often defined from a non-architectural view point, and therefore it is important to have a grasp of not only Architectural Place and its theory but the psychological and social theories that feed into it. Doing so will show how we as architects think of place as well as how we as *humans* think of place and the importance of its relationship to us and our daily lives. Before presenting the definition of place and its relevance and representation in architecture, it is important to look at a brief series of theories which have helped to define Place and architecture for us as architects and human beings throughout civilization. Therefore, it is important to first present unique and sometimes contradictory explanations to help solidify the final definition of Place. I have chosen to present five different theories as discussed by Aristotle [ancient-philosophical], E. Relph [modern-philosophical], Frank Lloyd Wright

[radical-architectural], Le Corbusier [social-architectural] and Juhani Pallasmaa [psychological-architectural]².

Theories and Historical Background

Ancient-Philosophical

Aristotle is one of the oldest and most well-known philosophers. Born in 384BCE in Macedonia, he is considered the founder of ‘formal logic’ (Kenny, 2014) and perhaps the first to practice the science of biology. Aristotle lived at the time of Alexander the Great and his work dates well before the oldest known architectural writing in western civilization: Vitruvius’s *Ten Books on Architecture*, which is believed to have first been published around 25BCE during the height of the Roman Empire (Vitruvius, 2007). The fields of Aristotle’s studies were extremely extensive, and include – perhaps unsurprisingly – theories on matter, being and place which initially reflect the work and theories of his teacher (Kenny, 2014). Aristotle studied under Plato who produced one of the first known theories on matter. In his essay on the ‘Theory of Forms’ Plato describes all matter we can see or touch in the physical world as an ‘imperfect copy’ that imitated the perfect version of its existing on another plane of existence. In essence, Plato states that

² There are as many theories of Place as there are places, as just the couple described later in this chapter demonstrate. Because there are so many different approaches to answering the question “what is place?” it is important to note that I limited my background research to these five main representations in order to give a broad but shallow view at the range of consideration given to the relationship between Architecture and Place within and without the field of architecture.

matter is nearly a type of virtual existence – here, but flimsy and not a truly solid or self-identifiable thing. Aristotle’s descriptions/theories of place fall into two different categories. The first – natural place – is very much a philosophical and abstract definition rather than the second – physical place – which is much closer to the modern discussion of Place definition. Physical Place unsurprisingly also deals with physical reality much more closely than Aristotle’s theory of Natural Place and is based almost entirely on geographic location.

Natural Place

Unlike his mentor, Aristotle does not define matter as an incomplete copy of perfect images. In his definition of natural place, Aristotle describes matter as separated into four different categories: Air, Earth, Water and Fire which have each a specific combination of four different traits: wet, hot, cold or dry. This relates directly to Aristotle’s first theory of place and a part of his work in *Metaphysics* (Kenny, 2014). ‘Natural place’ refers to the natural order of the elements within reality. Earth (cold and dry), being the matter of the world itself, was the center of the universe and naturally wanted to be as close to the center as possible (Kenny, 2014) – hence the phenomenon of falling objects. Although this particular theory of place has perhaps less to do with architectural place definition, it informs his other theories – including a less theoretical definition of Place.

Physical Place

For Aristotle, Place was defined by concrete and visible markers. Quite simply, by his definition the word ‘place’ could be used to define any set area within a physical boundary (Drum, 2011; Machamer, 1978). And object within a particular Place needed to only be contained within the innermost defining wall of the physical boundary. One example Aristotle uses is a wine sack. The place of ‘inside the wine sack’ contained any liquids within the inner lining of the wine sack. This definition is able to pertain to any set scale, and could in turn be used to describe a Place such as the inner walls that define a room, the inside layer of structure that makes up a town’s surrounding wall, or the inner skin of a bag or jug, just as easily as the wine sack. Place to Aristotle was simply a physical reality that existed as a constant and enclosed whole.

Aristotle also discusses Place in motion. He uses the example of a boat on a river. What would be the place of a person in a situation such as being on a boat when where they are is not in a stationary structure? The physical boundary which defines them such as a boat, is in constant motion and therefore cannot be used as a point of reference when discussing location (Kenny, 2014) so it must be expanded to fit the closest boundary which is not in motion. Here, the contents of the boat are not defined by the boat, which is in constant motion as it floats down river — but instead the boundary expands to the river itself, whose banks are unmoving and can be used as a physical location marker (Drum, 2011; Kenny, 2014) .

Of some importance is the fact that Aristotle did not consider ‘place’ and ‘what is contained inside a place’ as the same thing. What was in any given Place could change. Going back to the wine sack, this is illustrated in his writing with a description of how the Place of ‘inside a wine sack’ could be filled with wine; but if that wine is slowly drunk or poured out, the same Place becomes a place filled with the air that took the space of the wine. According to Aristotle, the physical boundary could also be filled with a void. It does not matter what is in a Place as long as the defining physical boundaries are there. Therefore something such as ‘our galaxy’ would be considered a Place because there is an obvious physical limit to it. But, ‘the universe’ could not be a place since its limits are non-defined (Kenny, 2014). However, although the universe is not considered a place in its own right, it can contain places like our galaxy or our world. Place itself is unchangeable according to Aristotle; permanent and unique. What defined the scale of Place is that a single place enclosed the smallest area that held everything within it in common. That is why his definition specifies the inner wall to define boundaries rather than the outer wall.

On Architecture

While Aristotle can relate his theory of physical Place — although not his interpretation of Natural Place — to architecture as we think of it today, both of his propositions are very limited. They provide a good starting foundation to the

discussion of place's relationship to architecture, however, they barely scratch the surface of the dynamic between the two concepts. Aristotle mostly focuses on physicality only and does not have to capture the full complexity of Place.

However, because of this, it becomes extremely easy to relate back to the field of architecture. For writing on architecture itself, Aristotle does not go into any sort of detail. He spends his time instead only natural sciences, logic and reason.

Architecture built in consideration of Place during Greek and Roman times took into account geographic location and environmental factors such as climate, weather, and building materials. These played a significant role in geographic placement of buildings but did very little to impact the actual design and form of structures.

All in all, for Aristotle, Place was very much a physical trait – more how we describe Space in modern architectural discussion. Architecture, while informed by some traits of its location, had only a tenuous relationship to the concept of Place. Most if not all of the ties between the two consisted of physical reality and measured characteristics.

Modern-Philosophical

While his theorem and writing is being discussed under the heading 'philosophical' Edward Relph is not a philosopher but a contemporary Canadian geographer. His work places an emphasis on many of the aspects now associated

with phenomenology and he is considered one of the leading theorists on “humanistic geography” (The Canadian Association of Geographers, 2009). Relph is most well-known for his work “Place and Placelessness” which is a published monograph based on his PhD dissertation. In it he covers the topics of space, place, and what he terms “placeless-ness”. Much of his research and theorization is based on the works of philosophers such as Heidegger and Christian Norberg-Schulz. Heidegger is one of the fathers of modern phenomenology while Norberg-Schulz converted many of the theories associated with phenomenology into an architectural and social context.

Space

Relph divides space into multiple categories with the intention of showing not only the broadness of Space as it can be defined but also how that broadness has an impact on our view of Place. He states that space is almost always referred to in relation to Place or the characteristics associated with a Place (Relph, 1976a). According to Relph, the most basic form of space is Primitive Space – which can be considered where animals move and live. Primitive space is only the most basic physical reality. There is no inclusion of spatial relationships, but simply interaction between the body or the senses and the surrounding environment. Perceptual Space adds the idea of action. It is focused around immediate needs and the identification of the surroundings based on the use and current usefulness of each object (Relph, 1976a). Relph likens this to how a child or infant would

experience space before higher cognitive functions become more developed.

Existential Space – or “lived-in” space – is one of the main basics for Heidegger’s theorem. This is space as it is defined by a cultural group, although it is still experienced individually (Relph, 1976a). Existential space is constantly in flux because it is defined by human interactions (Relph, 2008b). It is not always possible for existential space to be perceived outside of the cultural group it is specific to. Relph uses the example of Ayers Rock in Australia and how Europeans and Aboriginal people might view it differently. To the Aboriginal, the rock itself is filled with different meanings as well as connections to the landscape around it (1976a). To a European Ayers Rock is simply that – a Rock – even if it might be a particularly impressive one. In a similar manner Sacred Space is defined as well. Relph discusses sacred space in terms of archaic religious experience. Sacred space is centered on the meanings and symbols associated with a location. There is a particular meaning to every part of it. The final tangibly defined space – outside of Architectural Space, which should be discussed separately for this thesis – is Geographic Space. Relph associates color, depth, density, and solidity with geographic space (1976a). It is not objective nor indifferent – but instead he equates geographic space with human lived-experience, which would most likely also include proportion and the idea of comparison and contrast between experiences or different pieces of a single experience.

The last few categories which Relph touches on are intangible, and deal with the realm of thought instead. Cognitive Space is when space becomes an

object for reflection and in a sense is the very basis for thought. A point he brings up is that almost all thought is in terms of something – it is related to some type of space or place, simply because thoughts are created in reference to those concepts (Relph, 1976a). The final category of space Relph mentions is Abstract Space. Abstract space is very similar to cognitive space. The main difference that Relph mentions between the two are that abstract does not require the space to be a faithful reflection of a physical space such as cognitive space does (1976a). Abstract space is completely human constructed and mental in nature.

Architectural Space is categorized by Relph as space which is concerned with the “imaginative experience of space” (Relph, 1976a). And, unlike other types of space it is created in a deliberate attempt to create a specific space and spatial experience, while the other types of space are naturally occurring and tend to shift and change in a very organic fashion. Often the best architectural spaces contain what Relph refers to as highly developed abstract ideas of space (1976a).

Placelessness

One of the major factors which sets Relph apart is his theory on placelessness. Placelessness focuses on the spread of same-ness while local culture is dimmed more and more (“A pragmatic sense of place”, 2008). While Relph mentions that this particular phenomenon is not new to the current age. The spread of Greek – and later Roman – culture brought about the same process

through specific architectural and societal expectations. Inauthentic attitude towards place has become a problem of current society. This inauthentic-ness means that the depth of a place — one of its most important characteristics — is lost to cultural or social convenience. He states that this is never more evident than in tourism (*Place and Placelessness*, 1976). Tourism creates expected reactions based on what is socially or scholastically expected. It crushes an authentic experience of place.

On Architecture

In his discussion of the essence of place, Relph also mentions the term “topophilia” which has intriguing connotations when combined with architectural practice. “Topo” refers to the greek “place”(Topos, n.d.), while “-philia” is an ending which suggests a liking — possibly abnormally intense — towards the noun this ending is combined with (Merriam-Webster, n.d.). Relph defines topophilia as a very private and profound experience with a particular place. The example he gives suggests an intense enough reaction that it momentarily separates an individual’s perception from their body. This helps to re-enforce his own statement that private places hold greater weight — or significance — than public or communal places.

Radical-Architectural

Frank Lloyd Wright is called by many one of the greatest American architects, perhaps even the greatest. His work in the first half of the 10th century completely revolutionized American architecture, particularly in the area of housing and the qualities of a home. Born in 1867, Frank Lloyd Wright initially went to school at the University of Wisconsin-Madison before dropping his civil engineering degree to work under Joseph Silsbee in 1887 (“Frank Lloyd Wright”, 2015). Soon after, Wright started his career under Louis Sullivan, the “father of skyscrapers”, who he always greatly respected although they parted on poor terms only a little while into working together in 1893. One of the first buildings Wright completed after he started his own practice from home was the Winslow House in River Forest (“Frank Lloyd Wright”, 2015). This could be considered the precursor to what later was coined his Prairie Style. The building had a strong horizontal emphasis with open interior space. It wasn’t until the turn of the century that Wright started to gain recognition outside architectural circles. While living in Germany between 1909 and 1913, two published portfolios greatly increased his international fame (Elman, 1998).

Organic Architecture

Much of Frank Lloyd Wright’s work can be categorized under his own phrase “organic architecture”. Both his Prairie Style and later Usonian series prominently

explore much of the attributes he considered essential to this style and to human expression (“Frank Lloyd Wright”, 2015; Elman, 1998). Organic architecture is the idea that all parts relate to each other naturally. There are no forced connections or logical leaps within the design. There is also an integrity to the materials themselves that need to be maintained. And, there is a natural flow from the outside in, and the inside outwards. Within many of his Prairies Style designs, Wright strove to accomplish this through designs that utilized low-sloped roofs, long eaves, and often single stories with wooden panels or brickwork that along with row windows (Elman, 1998) only further emphasizes the horizontality of both the building and the often prairie-esque landscape found in the Midwest.

The Home

Starting in 1937 with the Jacobs house in Madison, Wisconsin, Frank Lloyd Wright created a series of homes he called ‘Usonian’ houses. The term usonian - like ‘organic architecture’ describes a particular style or purpose to Wright’s designs (Sergeant, 1976). Usonian is used more in terms of the end result or purpose however, while organic architecture is instead a way to bring those ideas to light with practical application. Originally designed to solve the problem of small but comfortable houses – they took his ideas of horizontality and privacy within the landscape that dominated Wright’s Prairie Style homes and applied them within reasonable budgets and much smaller forms (Elman, 1998; Sergeant, 1976). These usonian houses were built for a changing style of life as well. Women

became part of the work force outside the home, and it changed how mainstream live inside the home was portrayed. Because of this there are some main modification to the style which most Prairie Style homes exhibit. For example, Wright designed most of the Prairie Style homes around a central chimney and the idea of the home being very family centric. While the Usonian homes are still family-centric, they were initially designed for smaller and younger families (Sergeant, 1976). They also combine what used to be the formal dining room and the living room allowing easy and informal access to the now-central galley style kitchen (1976).

On Architecture

Frank Lloyd Wright designed buildings for the individual (Wright, 1935b). There is always a sense of human scale, particularly within his homes. An emphasis on local materials and natural wood – without paint or stains – ties his designs into the landscape around them. The low hung roofs with long eaves and horizontal-emphasis are particularly suited to the American Midwest (“Frank Lloyd Wright”, 2015), where most of his work was built. His work features a beauty and attention to detail that can only be expressed due to his intuitive connection to the natural world around him. Frank Lloyd Wright can be considered under the category of “radical architecture” for a number of reasons. Perhaps the most important one is

his drive to revolutionize architecture and his suburban style utopian plan; Broadacre City³.

Social-Architectural

Le Corbusier is one of the most well know figures in architecture – and a figurehead of the modernist movement. Born in 1887, Le Corbusier attended school at La Chaux-de-Fonds for an art-based education which included apprenticeships to people such as Peter Behrens and Auguste Perret (“Le Corbusier”, 2015). Auguste Perret in particular is known for his work with reinforced concrete, a material which Le Corbusier made frequent use of in most of his architectural work. He opened his own firm in 1912 – five years after designing and building his first house (“Le Corbusier”, 2015). Housing continued to define a large portion of his work. Idealized urban planning which often focused on social schemes revolving around homes and the contrast of public and private spaces was the other major category which he is the most known for. After moving to Paris, Le Corbusier started what became the Purist movement – an anti-cubist position which also led to the creation of a journal titled *L’Esprit Nouveau* – “The New Spirit” (“Le Corbusier”, 2015; Smith, 2012). Later in 1923 he published *Vers une Architecture*, which was a compilation of all the articles he wrote for *L’Esprit Nouveau* as well as what has become his most well-known work (Corbusier, 1970c). *Vers une Architecture* is not the first or last publication made by Le Corbusier.

³ Discussion of Broadacre City continues in Chapter 5.

Most of his projects – built or simply designed on paper, were accompanied by written accounts, diagrams and illustrations published and circulated.

Housing and Urban Planning

Many of Le Corbusier's architectural designs were focused on the categories of housing or urban design. As early as 1915 he started to design utopian plans such as "Towns built on Piles" which lifted walkways into the air to make utilities easily accessible and separate the street from the ground (Corbusier, 1970c). He suggested that through the use of steel and concrete the entire city could be raised as many as 65 feet above the ground. Piles themselves later show up in many of his designs both realized and not and show one of the many points which he designed with modern materials in mind. One design for mass housing by Le Corbusier which in fact was built was his *Unites d'Habitation* ("Le Corbusier", 2015) – a large multi-story project that is well known for its use of spatial sun screens.

His most famous contribution to housing design is his design of "the domino house" which used reinforced concrete to negate the need for structural walls of any sort. As the illustration of it suggests, simple columns carry floor slabs allowing for completely open plans as well as the ability to make much more dramatic cuts into the façade of a building (Trachtenberg, 2002). Many of his other designs carry horizontal ribbon windows which make full use of this ability. This simplification of

parts also lends itself to prefabrication and the ability to mass-produce. Standardization was a key component of his urban designs as well. La Ville radieuse takes this to the extreme with sixty story tall towers designed to hold 40,000 people each. This urban utopia was centered on the idea of ‘the city in the park’. Most of the urban sprawl would be taken up by park-like green space, which allows the people inhabiting it to walk freely – separated from automobile traffic by raised roadways (Corbusier, 1970c). His attention to automobiles within the plan is unsurprising⁴. In his writing *Vers une Architecture*, Le Corbusier also has an entire section devoted to automobiles, in which he compares them to temples as well as a jumping off point to discuss the merits of harmony and proportion within architecture (1970c). Most of Le Corbusier’s work nods to his personal appreciation for the work of American engineers. For example, he greatly praises the design and utility of grain elevators and silos commonly found in the American Midwest and Canada.

Mass, Surface, and Plan

Architecture is divided into these three main components according to Le Corbusier (Corbusier, 1970c). Mass is the basic form it takes. Accordingly – geometric and pure forms are the most beautiful and the most functional. The surface – considered separately from the mass – is how definition is added to each form used. He considered materials as part of surface and a means of

⁴ Discussion of the Radiant City continues in Chapter Five.

generating lines which must accent the form created by mass. Plan to Le Corbusier is the defining feature of any design. It should be what informs the rest of the design — including the section and elevation (1970c). All forms start in plan and are realized through a proper composition of the plan.

On Architecture

Le Corbusier also made use of many modern materials, although reinforced concrete was by far the most often expressed. He also contributed to more than just the field of housing. His re-invention of the house through the slab and column design in what is now called the Domino House was a breakthrough which opened up floor plans and facades like never before (“Le Corbusier”, 2015; Trachtenberg, 2002). It made variations on circulation and lighting the most important aspect of a design.

Le Corbusier was chosen to represent the Social-Architectural viewpoint because of both his well-documented and outspoken viewpoints concerning architecture and its ability to mold human social spaces as well as his personal interest in housing and urban planning. One aspect in particular that is interesting in terms of the relationship between architecture and Place is that for the most part Le Corbusier — like many of his modernist and international style contemporaries, chose to purposefully ignore or down-right demolish those links. Ideally, Le Corbusier wished to design a utopian city plan which not only improved

quality of life but also obliterated any previously standing architecture or social divisions – at least in terms of space and location. While his first attempt at a utopian plan – the Contemporary City – divided people by their class standing, in his revision La Ville Radieuse ordered people by their family size and the space deemed appropriate for each number of people (Corbusier, 1970c). In *Vers une Architecture*, Le Corbusier complains that architecture is stifled by custom. And, on a whole, Le Corbusier embraced very early many of the technologies which have become mainstream in both architecture and daily life. For example, in his La Ville Radieuse, he not only designs under constraints that only modern materials such as reinforced concrete and steel make possible, but also takes into consideration the plans for automobile access and transportation networking (1970c).

His description of the home as a “machine for living” (Corbusier, 1970c; Smith, 2012) while obviously a positive to Le Corbusier – does tend to cast the act of inhabitation as a shallow imitation as well as fails to consider many aspects which Place can be recognized by are present in more psychological approaches to design and theory. Perhaps the largest critique of Le Corbusier’s take on architecture’s effect on Place is that he chooses to contentiously ignore it. This particular attitude – made particularly famous in the international style – can often still be seen in the work of many contemporary architects, where Architecture has become a medium for personal expression over site and cultural considerations.

Psychological-Architectural

Juhani Pallasmaa is a current Finnish architect, author, and professor. He has both an extensive written body of work as well as multiple interviews and lectures which provide insight into his much more experiential approach to architectural design. His most well-known written work is *The Eyes of the Skin*, first published in 1996 and republished twice more since (Morgan, 2012). This work focuses on the theme of multi-sensory experience within architecture and concern over the heavy reliance on visual stimuli that is present in much of the current architectural studio culture. Other works include *The Embodied Image*, published in 2011 which is focused on images and representation, as well as collections of essays such as his two volumes entitled *Encounters*. His free-standing essays include the work “Hapacity and Time”, and “Newness, Tradition and Identity: Existential Content and Meaning in Architecture” which, as both titles suggest, focus on the notions of touch and time in architecture (Pallasmaa, 2000a; Pallasmaa, 20012b).

Much of Pallasmaa’s work places a strong emphasis on the experience of architecture rather than its formal expectations or technical specifications. In his essay “Hapacity and Time” Pallasmaa discusses the concept of “weak architecture” (Shirazi, 2009) – or, architecture which does not grasp to be the focus of attention. Instead the importance and message is brought about through

site integration and treatment of the surroundings (Pallasmaa, 2000a). His main arguments for architectural definition can be divided into three foci: Touch, Time (and with it tradition), and Atmosphere.

Touch

Touch is described by Pallasmaa as the primary sense. Vision – which is commonly considered the most utilized sense in modern times – is explained instead as an extension of touch. Pallasmaa explains this as vision being the way we can ‘touch’ before we are within physical handling distance of an object we are visually engaged with (2000a). With such prominence placed on tactile experience, it is no surprise that materiality is also a high concern. Materiality can be seen as an expression of nuances. Within “Hapacity and Time” Pallasmaa includes a section titled ‘The language of matter’. Within this section he states that each material has its own story. Stone, brick, bronze and wood are all named as materials which work with – not against – time (2000a).

Time

Time is another theme Pallasmaa returns to again and again within his work. According to Pallasmaa, time is an essential consideration to architecture. Without the past, the present has nothing to situate itself on and nothing for the future to continue to build on after the present is over (Pallasmaa, 2000a; Pallasmaa,

2012b). Tradition is an important part of every site and every architectural project. In his discussion of time, Pallasmaa notes that observance of a basis in tradition as well as a general acceptance of time and its impact on any design allows for deeper expression and a more solid foundation (2000a).

Acknowledgement of the past creates meaning and weight in the present. While much of modern architecture relies on its unique “newness” – which will quickly grow old and wither away – a rootedness in tradition allows architecture to fit into a seamless continuity (Pallasmaa, 2012b).

Atmosphere

One of Pallasmaa’s most pressing points is that architecture is not optical sensory only - or any single sense specific (even with his own emphasis on the tactile). Rather, architecture is something to be experienced as multi-sensory (Pallasmaa, 2014c). And atmosphere isn’t something that can be singled out or quantifiable, but something that is diffuse. In a lecture to IIT titled “Space, Place, and Atmosphere”, he refers to atmosphere as being similar to a first impression - an involuntary reaction immediately experienced - calling it also a “feeling, mood, or ambiance” (2011). Pallasmaa refers to atmosphere as something expressive of the relationship between people as well as something that lends specific character to a place (2014c).

On Architecture

Much of Pallasmaa's work places a heavy emphasis on the experience of architecture rather than its formal expectations or technical specifications. Pallasmaa states that architecture is made as a representation of humans and their interactions. A dedication to cohesiveness between architecture and where it is while not explicitly stated in all his work, is an obvious omnipresent theme.

Traditional Exploration of Place

The reason behind choosing five distinctive takes on architecture and place is to create a starting point from which to not only observe both current and previous expectations of the architecture-and-place duality but also to use for reference when discussing the positive or negative effect each view point has had on that duality. The use of these sources cover not only cover relevant time frames but also allow comparison between successful but extremely different points of view. One important note that should be brought to attention is that all the examples discussed above are of a decidedly western point of view. There are three main reasons for this. The first is that it was important to pick not only architectural examples who might have a dialogue with each other but also narrow down in order to make consideration more practical. Place as well as its relationship to and representation through architecture can cover an enormous range of information. A third reason that these — as well as later — examples

where brought to light in particular was because it was important to explore each facet of Place and Architecture covered through the work and theories of people that are already familiar. This allows a more controlled focus on the subject matter being discussed rather than a complete over-haul of all considered context for each example.⁵

Defining Place

While Place has so many different definitions, in order to understand later research about various aspects it is necessary to specify what exactly “Place” refers to. According to the dictionary: Place is “a specific area or region of the world; a particular city, country, etc; a building or area that is used for a particular purpose; a building, part of building, or area that is used for shelter” (Merriam-Webster, nd). In terms of Architecture this is usually the definition we fall back on. This is a good starting place, but it doesn’t truly capture what is covered in the broad category of Place. Place is something we experience with all of our senses. And, although the physical mass and materials of a place play a large role in defining place, it is by far not the only thing that makes something a Place. To create a more comprehensive definition it is important to make sure we can cover each part.

⁵ However, it has become more and more important to discuss Place as a global phenomenon and ideology. Traditional views on the relationship between man and nature, as well as between man-made structure and nature differ greatly in Eastern and Western cultures. The implications of this are not covered in this thesis, although they provoke further study.

Relating Place and Architecture gives Place an even stronger physical connotation than normal, but many of the properties that effect perception of place are not *only* tangible. Within each physical aspect of Place there are also many intangible factors that modify it.

First there is the physical mass of objects. There is a set ground, which you move over, there are solid objects which direct that movement around or through or over. It is possible to touch the pieces involved. A person can manipulate and change the environment surrounding their self. This includes the built form of buildings as well as nature, and the surrounding environment. And this is the most common definition of Place: the physicality of the collection of objects in a space. There is a visible form to the solid objects. Even glass has a visible presence if nothing else from glare or minuet distortions. While space does not need to be seen to be interacted with, it is usually assumed that there is a visible presence to it. Texture is perhaps the largest factor in the “character” of a location, both visually and physically. Every material has a slightly different feel and appearance, which comes across in its texture. Character is what is commonly thought of as the more “romantic” definition of place. This is often what we try to capture in representation of place, descriptions, photographs, and drawings. They can be exaggerated or staged to bring a certain feeling more directly to the viewer. Perhaps the most well-known example of this is Piranesi, who created extremely romanticized etchings of Roman ruins.

Next are intangible characteristics of Place. We often forget sound is part of place unless it becomes overbearing. But that is only until we have sound deadened. It is an intrinsic part of any place. All objects make some sort of sound. People often speak fondly of bird song, or babbling brooks when describing tranquil or natural settings. Leaves rustle, gravel crunches, buildings and mechanical systems creak and settle over time, even footsteps on solid concrete have a particular sound associated. This is the intangible side of character. It consists of the light and the feelings with them and general sense of a place; factors that affect how a place feels. Much of atmosphere comes from the interactions between different materials and their relation to the space as a whole. Although it can be argued that most representations can still be considered tangible, I have categorized them here because they are not the physical space of the “place”. They are as their name states: representations, not physical reality.

Aspects

For this research I propose looking at Place as system of layers composed of tangible and intangible elements which build off of each other. The first categories to consider as layers must be the uppermost basic building blocks. Each level brings a new complexity to an understanding of the whole. There are seven main aspects to consider from bottom to top: Space, Mass, Material, Time, Atmosphere, Occupation, and Experience.

Space

Space is the most basic building block of place. It represents physical location, basic boundaries and dimensions. In a sense, the category of space can be thought of as encompassing the whole of Aristotle's theory of physical place. Space is the most basic definition for anything that can be divided into some sort of section. In a purely geographical sense, space is truly the basis for Place. It is tangible, easily determined and makes a natural starting point to add other layers onto.

Mass

By adding on mass in the second layer, the space starts to have some definition. There are interruptions and progression through the area as well as separation in both a visual and physical manner. While discussing mass, it is also necessary to look at proportion. Proportion is a secondary defining characteristic of mass. When added to mass, it decided what holds precedence. It creates height and scale. And, most importantly, it describes the relationships between different bodies of mass within a space. Without proportion, mass alone does not have the ability to delineate 'what' it is. Proportion describes the difference between a chair and a wall in much more certain terms than mass by itself can. Proportion also defines between what bodies of mass will be solely visual barriers and those

that are insurmountable physical barriers or — as is often the case — a mixture of attributes from both.

Material

Materiality can break up masses as well as space. By changing or conforming to a particular material it can completely change how a mass or space is perceived. Texture is a secondary aspect of materiality. Texture — like proportion is to mass — helps define material. It can help a material stick out of its surroundings or present a more unified front. Color is another secondary aspect of materiality. Similar to texture, it helps differentiate not only between materials, but between different conditions within the same set of materials. Color itself is supposed to have some unique characteristics such as effects on mood.

Time

The definition of qualities which can be considered part of time fall into two different categories: those that exist in a certain time and those that have changed or progressed through the function of time. The time in which a Place is created has an extremely deep impact on how that Place can be expressed. It determines materials that can be used, and is a starting point for understanding the cultural and social reasoning behind a Place's creation. As time changes so does the uses and meanings embedded in a Place. In that sense, the passage of

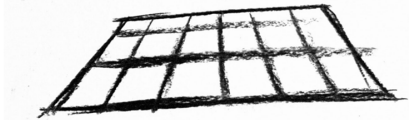
time is equally important as the timeframe of the original conception of a Place. Different materials age differently, and different expressions in art, architecture and form are described only through a progression of time. Time is also the first layer that deals with the intangible.

Atmosphere

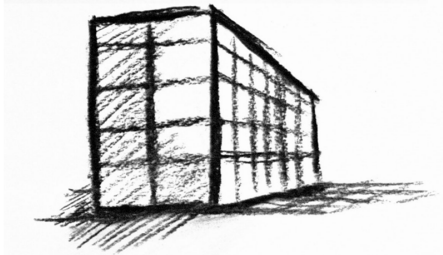
Atmosphere is the fifth layer to be added to Place. Like each previous layer it encompasses certain qualities which bring greater definition to those previously laid down. Atmosphere covers many of the intangible characteristics as well as light and shadow. Light and shadow in particular contribute to intangible division of space. The best description of atmosphere is that feeling which comes from entering a new Place. How it describes itself to a visitor and what properties stand out when the memory is revisited. It is important to note that atmosphere is something that exists independently of a person. A Place has its own unique characteristics which do not require a presence in order to occur. These are the features defined in atmosphere. What is brought to place through inhabitation and personal presence can be considered under the final two layers of Place.

Occupation

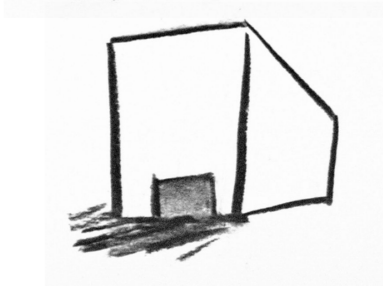
Occupation is the sixth layer and the first one which deals directly with humans and their presence in a Place. How a Place functions and how it is related



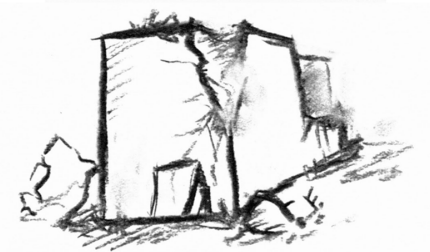
Space



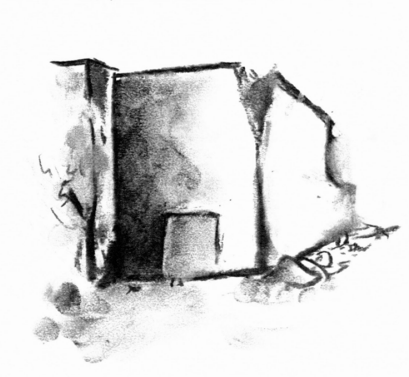
Mass



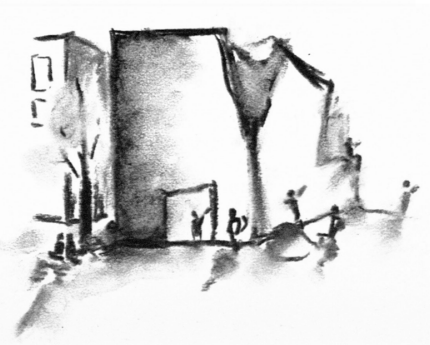
Material



Time



Atmosphere



Occupation

Figure 1. The first six aspects of Place

to social and cultural actions and reactions relate to its occupation. Occupation describes how many people tend to inhabit a Place, as well as the common purposes they have there and the type of events which would drastically change either of those two.

Experience

Experience is the final layer because it is what each individual brings to a Place. Experience is interpretation. This is the most intimate level of understanding and is by definition unique to every person. It is characterized by how a person feels, sees, learns about and remembers a Place. Experience is what representations of a Place are based on. Without experience, there would be Place, but there would be no lasting knowledge of it, nor remarks upon its nature.

While each aspect of Place that has gone into this definition can be claimed in relationship to other Place theories and discussion, they are seldom if ever brought together in a cohesive whole. Instead, focus is usually shifted to one or two main points which structure the argument. However, to achieve a truly comprehensive understanding of what Place means, it cannot be looked at with such limited consideration. Just as Place encompasses the tangible and intangible, it also takes into account the totality of the seven layers which I have laid out. I propose exploring Place through these seven layers with a particular focus on the two extreme ends of the spectrum. The reasoning for this is two-fold. First of all,

the extremes are the most basic building blocks of Place and its most defined concepts. By looking at where Place starts and where Place ends, the middle is able to be filled in with much less difficulty. The second reason for this is that the categories for the layers on either end are those which tend to be very commonly included in most media relating Place and Architecture. They are where some of the strongest connections form and they are also the ones that tend to become oversimplified into become Place on their own. By using these categories as the main basis for understanding Place and Architecture, it becomes easier to discern where holes have been left by previous studies and try to either mend or clarify the reasoning behind them.

[2] SPACE AND COGNITION

Often the words *place* and *space* are used interchangeably in both daily speech and in architecture-specific contexts. They become synonymous with both each other as well as the geographic location defined, where they naturally overlap. In some instances Place has been defined solely on the characteristic of physical space, but that is a very limited and antiquated notion. This limitation does not apply to Place in an architectural context. It is one of the most important points of this thesis to state that the duality between Place and Space while true — is not a complete definition of either, only where they overlap. Place cannot be defined merely as physical locality, just as Space does not end as soon as it is out of sight. While Place and space are not easily separable — they are far from the same.

Space without Place

Previously the definition of Place was explained as a set of components with Space being the most basic. What this means is that Space is the starting point of Place — it is how place can be examined in the least complex and unfiltered manner. Every Place will have some aspect of space in it — even places that are not physical. Represented or virtual Places still retain a sense of theoretical Space as their most basic component. One interesting supposition on this topic was covered in an article by Michel Foucault (translated by Jay Miskowiec) titled “Of

Other Spaces”. Utopias are idealized societies or civilization. Foucault poses the idea of Utopia as a spaces without Place (Foucault, 1986) because while the ideology feeding into a utopia relates to reality and the people and cultures that inhabit it, the actuality of a Utopia will never exist.

Place without Space

Is it possible to have Place without space? Within “Of Other Spaces” the term of heterotopia is introduced as a counterpoint to the idea of utopia. Heterotopia is defined as sites that occur within reality and have a piece of all other sites of that particular culture represented in them – but not perfectly (Foucault, 1986). Rather the representation must be inverted or contested or distorted. In this sense they are seen as outside of place according to Foucault, even though they have a physical location. The Places we all remember from the books and movies of childhood, as well as many different myths and legends from all the cultures of the world, often take place in the impossible places that exist outside of physical space. However, this topic’s relation to architecture is part of a much wider discussion and will need to be continued later in Chapter 4: Fake Place.

As previously discussed, Space is a large part of Place. It also has some of the most extreme effects on the perception of the built environment that creates it. People are very visual beings (Rock, Irvin, and Victor, 1964). That perception

can make – or break – our impression of place. In order to get a better understanding of physical space and its psychological effect I formulated an analytic study comparing two well-known and still existing, massive housing projects with similar backgrounds in social and political motivation. Through this comparison these spaces are explored using a variety of information including statistics, historical information, site visits and a recent technology “Depthmapping” which uses figure-ground mapping as a basis for deconstructing what physical space can mean to us. Multiple sources were used to compile information that not only backs up the narrative on each housing project, but also provides some hard numbers which flesh out how each is situated within its context. One of the most important parts of this section of research is the set of four spatial syntax diagrams. Corviale and Háje each have two diagrams – one which shows the exterior and how the building masses are laid out in relation to each other, and a second which shows interior apartment layout as well as how halls and rooms are connected on a more human scale.

Theories and Background

To start out with: the layout of masses and physical landmarks within a project naturally leads to certain assumptions about the space and modes of thought concerning a particular area. One example of this are Sabil⁶ buildings which are a common occurrence in many Middle Eastern cities. Sabil were built

⁶ Sabil buildings are attached to the exterior of complexes and have various charitable functions such as mosques, schools and orphanages. And, they often have *Kuttab*s – schools for learning the *Qur'an* – housed on their upper floors.

onto the walls which bounded a road. Their closeness to pre-existing structures is a symbol of cultural rules which included “avoidance of harm and not causing harm to passerby” (Mohammed, 2010, p.262). Through these mentioned buildings spatial configuration is used to tell the unfamiliar visitor about social and cultural practices. In another approach, Diana Cheyenne Harvey divides spatial layout into four main categories which can cause either deliberate or automatic responses. In this system, *unstructured spaces* are simple, and uncluttered. Often they are considered to be the unintentional spaces which surround very structured layouts such as memorials. *Structured spaces* are, not surprisingly, the opposite. They require attention and guide a visitor down a very specific path with defined boundaries (Harvey, 2010). *Imposed structure* can occur within either of the first two categories. It refers to a layout where the designer’s intentions are clear. How a visitor is supposed to understand a place is laid out for them. *Implied structure* allows for individual interpretation. Although both of these descriptions talk about the interaction of space and culture, they neglect discussion of why this is truly important to Architecture in more than just a form-and-function-based approach.

Perhaps the best explanations on the importance of interlacing culture into the physical manifestation of space is this quote from Christian Norberg-Schulz’s *Genius Loci* (1980):

“The genius loci becomes manifest as location, spatial configuration and characterizing articulation. All these aspects to some extent have to be preserved, as they are objects of man’s orientation and identification. [...] Such properties are always capable of various interpretations if they are properly understood” (p. 180).

Being able to navigate around a space or sequence of spaces is a factor which can relate back strongly to mental health. Having the ability to navigate through a space is both necessary and comforting. A design does not need to be a basic grid with no expression outside of those boxes, however, in order to be navigable. It is possible to design even complex environments that still lend themselves to relatively simple and therefore easily navigated structures. One example is the city of Prague in the Czech Republic. One of the defining features of the city is how intangible yet easily navigable the system of streets is. There is a clear definition between major thoroughfares and more intimate courtyards and alleys which connect ground floor businesses (Norberg-Schulz, 1980). In this description the author is explaining the structure of the old city center. Its layout makes it intrinsically easy to understand even for a visitor who has never before set foot in the city. Streets are turned into paths which connect structured exterior “rooms” in the form of rings or squares. It is connected in a very intuitive web of paths and passageways (Norberg-Schulz, 1980). They do not require in-depth thought to navigate, which in turn means that more people simply are willing to navigate them. Prague has a very “walkable” city center. It is also a “likeable” city center. Not only does it conform to the ideas of diversity and multiplicity of uses but it is set in a configuration that people understand. People can – and need – to walk down the street to go to the store, but it is a pleasant and desired experience. While in the historic city center, a visitor physically wants to be there. It promotes positive mental health and it respects the culture of the people who live there. Visitors get a glimpse into the culture and the life of the

place through its navigation (Mohammed, 2010). All of these create a very unique character over time but also contribute to the creation of a place which is easy to read and therefore to navigate through, even if the visitor does not understand fully the culture that created it.

Comparison

Because perception is so important, when choosing two social housing projects to be the center of the investigation, it was important to choose two which I had personally experienced, and it allowed for a more narrative explanation to some points in the research. The Háje neighborhood on the edge of Prague and Corviale on the outskirts of Rome were chosen because they left strong impressions. They were also built under similar political and social circumstances which minimized the possibility of other factors such as building age or political motivation to be considered defining contrasts between the two building projects.

Both examples at first glance share many similarities. They are both mass socialist housing projects. Not only were they designed with the intention of providing housing to people, but they were the product of a national revision on what “housing” meant. They were erected on the outskirts of their respective metropolitan areas. Both try to merge housing and shopping areas to create a mixed-use environment. Although both condense housing in an apartment style rather than individual housing units, they also both cover a large number of square

meters and use the space around them as a sort of park and natural environment or green space. How they approach the spatial syntax, distribution of building mass throughout the space and its meaning on cultural and social cues are not the same though.

If Corviale seems similar on the outset to the Panelak, why are each building's level of success so dramatically different? This can be attributed to a couple different factors. They were built with very similar intentions but during different time periods. Each were built as a localized mixed-use environment. But, while Corviale tried to integrate the shops and community rooms literally into the middle of the building, the Panelak were instead arranged around a separate area which formed the shops, transportation hub, and community spaces. They were still more-or-less connected to the Panelak, but this method broke down the monumentality of the structures and allowed a more human scale to weave through the area as a whole.

Háje Neighborhood

The first housing example is the Panelak that stand on the edges of Prague. They were created during the Socialist movement in Czechoslovakia in the 1940s and 1950s. The spirit of the time was progress. They were influenced by an astounding number of factors but, in a sense the ebb and flow of ideas in postwar

Czechoslovakia look like a series of simple trial-and-error approaches to mass housing. Internal influences such as standardization and industrialization pushed for material conservation and for interlocking units that were easy to fabricate and reproduce rapidly (Zarecor, 2011).



Figure 2. Park space in the Háje Neighborhood

The Panelak carry a distinctive façade pattern from their pre-fabricated, panel based construction, but over all they visually integrate into the surrounding community and they have, in turn, a good reputation which also means they are better maintained and have an overall positive influence on the standard of living for inhabitants in recent years. They are known to provide both good accessibility and an adequate standard of living inside, as well as access to large green areas and parks (Temelová and Slezáková, 2014).

Czechoslovakia focused on a feeling of community that was spread out between multiple buildings. Huge community plans with individual family homes took precedence over high-rise apartments in most of Czechoslovakia's architectural contests in the post-war era (Zarecor, 2011). The Háje neighborhood is populated by 15,686 residents, and overall Prague houses over 40% of its population in Panelak (Temelová and Slezáková, 2014). While there is a fear of social degradation in these older Socialist neighborhoods, Háje and multiple other Panelak areas are well established and show no signs of degradation (Temelová and Slezáková, 2014). Visiting the Panelak still stimulates a feeling of community and family. The large swatches of green land between buildings brings an almost park-like atmosphere to the place. It is easy to tell where one is, easy to navigate and not at all threatening.

Their color-decorated facades breaks up the building mass to a human level. Public transportation services that run to the Panelak include both the bus and tram network as well as the underground, so even though Háje is categorized as an “outer city” development (Temelová and Slezáková, 2014), it stays well connected to the rest of the city. All of these factors play into spatial syntax in a positive way and the rather massive Panelak development is still a very positive neighborhood to inhabit.

Corviale

On the other hand, Corviale was designed to be imposing and massive and self-sufficient, which has hurt it. It is cut off from what is around it – the only public transportation is a single bus route. Residents are not well connected to other nearby developments and the mixed use part of the project was so under developed without outside stimulation that it never was able to get a secure footing and has served to only alienate residents more from the original intention of the project. According to a translated report on a proposed facility update budget “the local community is currently being marginalized due to the bad reputation of the building, but the data pretty much does not differ from other neighborhoods...” (Contratto di Quartiere II, nd, p.1) which means, although Corviale should not be worse off than other areas near it, the building itself has led to a higher level of degradation. The unemployment rate of 15-34 year olds in Corviale was 29.4% even in 1991 when the unemployment rate for the same demographic was averaging at 18.9% in Rome. The negative ways spatial syntax could affect mental health and sustainability are still highly visible while this housing project is neither old enough nor new enough to consider any discomforts merely a sign of changing political views. Corviale was built in the 1970s, on the edge of Rome (“Housing Prototypes: Corviale”, 2002), and was created in the spirit



Figure 3. Exterior space at Corviale

of progress and of standardization. Most of Corviale is a single giant building mass. It is functional and modern and imposing.

The original plan called for 1,202 flats over 9 floors and 2 basements with a total of 6,133 rooms, designed to hold roughly 8,000 inhabitants (“Corviale”, 2000). There were some outlying structures designed which did not directly attach to the main building, but they were sunk into the landscape, and did nothing to break up the monotony of the nearly kilometer long concrete block (“Housing Prototypes: Corviale”, 2002). Although there are elements which break up the façade they are in and of themselves still massive. The stair and elevator cores break the building into two sections, and the planned areas for community spaces and shops take up the 4th floor horizontally.

Originally shops were meant to be incorporated into the housing, to provide the diversity and mixed-use that such a large number of people would need in close proximity. There were plans to include a library, art school, state school, pharmacy, market, restaurant, commercial shops among other things (“Corviale” 2000), however, the shops were never fully completed and eventually they became overrun by squatters and were partitioned into new illegal homes. Over 100

additional families annexed parts of the fourth floor shops. All these forms run the entire length or height of the building. They are monumental and are still far from human scale. Corviale also lacks a sense of the culture that built it. There is no precedent for such a large housing block – although there have been multiple other attempts at mass housing in Italy, and Rome in particular. There is no sense of neighborhood or community at Corviale. The halls are crowded with things but nearly devoid of people. There are very few social interactions even when passers-by cross paths. The solid concrete face with little to no ornament does not relate to anything familiar or normal to Roman Architecture. Corviale itself presents a much sterner and unfriendly air than the Panelak.

Depthmap

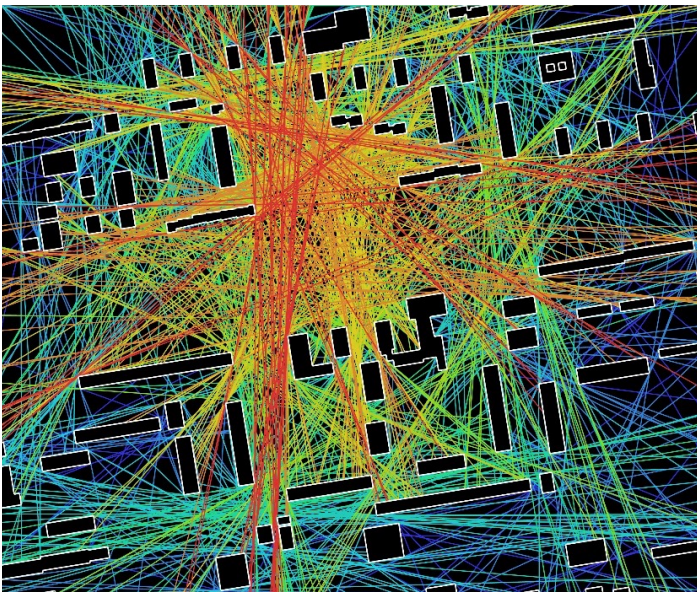


Figure 4. Exterior depthmap of the Hájé Neighborhood

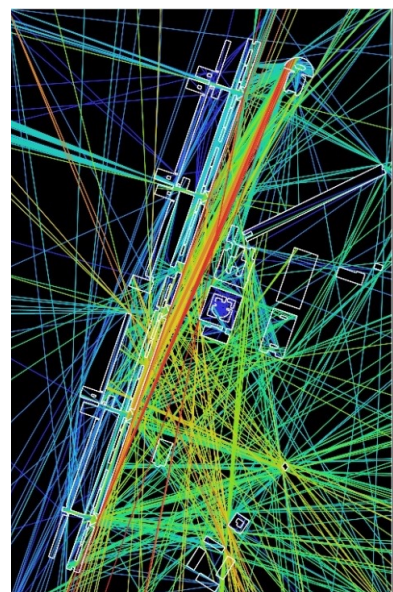


Figure 5. Exterior depthmap of Corviale

Comparing the two depthmap graphs pictured above there are some very obvious differences. Firstly, it is very obvious that not only does the Panelak development have more lines of visual connection, but they are spread further throughout the map and they create a much denser and warmer pattern than Corviale's mapping. Most of the lines for Corviale stay in the blue and green spectrum – very few show strong warm colors, which indicate stronger and large connections. The lines on Corviale also are more or less unable to cross the building itself, or to go around it. They are thoroughly divided by the mass of the building. Within the Háje neighborhood, the connections form in multiple

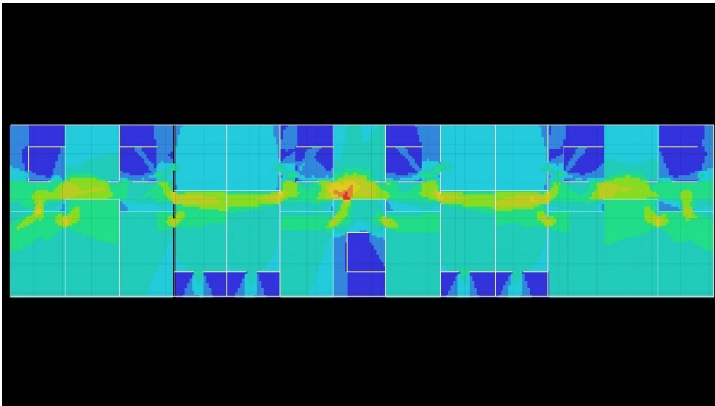


Figure 6. Interior depthmap of a single panelak

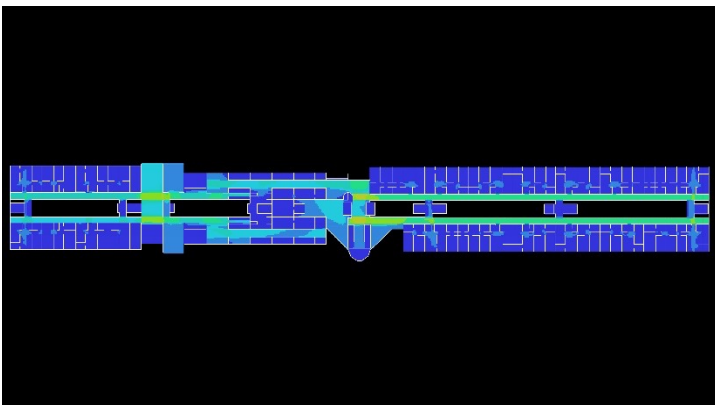


Figure 7. Interior depthmap of a section of Corviale

directions and warmer connections are spread through a much larger portion of the development.

The interior plans reveal similar comparisons as the exterior plans. The interior of Corviale is very cut off, even from itself. Each apartment has almost no connectivity between rooms and no connectivity to the hallways. The halls

themselves are so long and narrow that they provide sparse connectivity for their size and function. The circulation bay, that divided up the plan, is visually the most connected area of the entire section. However, the individual pieces, such as the stairs and elevators are still segregated from each other and are walled off from the interior shafts that split the building down the middle. On the interior plan of one Panelak structure, there is clearly a stronger visual connection in circulation spaces. There are no long hallways within the Panelak. Instead, apartments link directly to vertical circulation shafts. Neither housing program has a very high level of interior visibility, however there is still an obvious improvement in visibility between rooms within the Panelak. The only areas with the deep blue color that defines lowest visual connectivity are where the bathroom of each apartment is located. This contrasts strongly with the predominance of the same color throughout the majority of Corviale's interior. In both spatial syntax explorations it is clear that the form of Corviale stunts visual connections on both site and floor plan. Any visitors or residents immediately lose touch within the massive floor plans between the long narrow hallways and the disconnection from vertical circulation to other interior spaces. The size and shape of the building does nothing to promote social interaction or community.

Conclusions

In order to produce a truly sustainable urban environment, the factors of fitness and health need to both be addressed thorough spatial syntax. The spatial

syntax of an urban environment can be designed to have direct impact on the mental health of inhabitants as well as on their cultural and social view-points. Understanding of culture should not be a necessary requirement for navigation in any given place. However, clarity of spaces can better inform about a culture which is part of a place just the same as the physical ability to navigate a space. It is important that culture and space are intertwined, because how people interact and view a space will define how it is utilized, and it creates a process of a sort of continual self-awareness and self-evaluation. How a space is planned out and how users are given clues about it, directly effects how they perceive the space as well as the other people and the culture represented in the space (Harvey, 2010).

It is not a new idea that space needs to be designed to fit a specific aesthetic. How spatial organization occurs can be manipulated by design to not only reflect the people that use it but directly influence their perception as well. There are a couple basic categories which govern much of how we perceive a space – and thus our reaction to it and how we interact with it as well as others in it. We rely on sight a great deal to tell us about our environment and how to navigate it (Pick, 1969). Set, easily discernible, and visible boundaries between public and private spaces are important because visual markers are often used for navigation. The perception of a particular space depends heavily with how we interact with it. Future urban spaces can be sustainably designed by working with the perception of physical and psychological reality they create. Not only can they take cues from existing spatial patterns as a way of grasping social and cultural

heritage, they can also help create spaces which promote sustainable practices as well as safer and happier neighborhoods. As stated by Christian Norberg-Shulz, humans need to be able to connect to an environment — not only to orient themselves within it, but to be able to identify with it in a personal sense. We remember places based on social aspects as well as physical landmarks. Humans are visual creatures. They judge their surroundings based on what they can see. It is healthier and less fear-inducing to be in an environment that appears open and manageable. That is one of the reasons for the failure of some mass housing projects, such as Corviale, while other seemingly similar projects succeeded, such as the Háje Neighborhood in Prague.

CONCLUSIONS PART I

The question of Place and architecture is by no means a new or exotic subject, yet it is often overlooked, extremely simplified, or ill-defined within the field of architecture. Place plays an intrinsic part in any architectural design. It affects any experience within or without, and defines the *what*, *where*, and *when* of the structures and people who inhabit that place. It is impossible to ignore the importance of Place because as humans we are surrounded by places - both purposeful and unintentional. As architects we must take into consideration the regulations of who, what, when, where, and how, which as stated before, are grounded in Place. It is natural to discuss Place when diving into the theories behind the practice of architecture. Throughout the history of architecture, how design has responded to Place has dramatically changed how we as both architects and humans see the world around us.

Architecture and Place

This first section was written with the intention of clarifying exactly what “Place” refers to in the context of architecture and how it is expressed in the built environment we inhabit. Place is currently a simple word used in a multitude of different situations with just as diverse a set of definitions. By laying out the seven aspects that bring definition to Place, the foundation for discussing how

architecture related to Place is firmly composed. Grounded in a lineage of evolving concepts, and the stage is set for further conversation on how we as a profession should discuss, design, imagine, and inspire Place.

Space and Cognition

At first glance, the discussion of space in relation to the human condition might seem disconnected from the original goal of improving our understanding of Place and its role in architecture. However, it is an integral fact that space is also an intrinsic part of both architecture and place. Space could perhaps be referred to as the simplest form of architecture. Physical space is the most basic way we can hope to describe the concepts of volume, enclosure, form, and proportion - all fundamental tools in the hands of an architect. Physical space has also been used as a primary defining characteristic of place, which begs the question: how then can place and space be differentiated in the context of architecture? It is necessary to differentiate the two concepts, because, while Place may be reduced to space, in and of itself, Place is so much more expansive. Space is merely one aspect of Place. Never the less, space cannot be ignored any more than place can be demoted to simply physical space. As can be surmised, understanding space is essential to both Place and architecture.

II. PLACE CREATION

“... and it [identity] has to do with your personal history and your family history and the history of your wider world. We are not only here and now, we are here as products of time in many way. But that tends to be forgotten, particularly in today’s world, which is increasingly a world of ‘nowness’.”

— Juhani Pallasmaa, *‘In conversation’* partial manuscript of a conversation with Peter Zumthor (2012, p.25)

With regard to architecture there are two definitive and necessary areas which overlap Place and Architecture. One is the representation of Architecture, how it is shown and explained within the context of its creation. The second is that actual creation. Without Place, Architecture simply doesn’t exist. When architecture is created, in a sense, so is Place. It is absolutely necessary to understand that correlation in order to use the many advantages this may offer throughout the design process. Can all Architecture be considered Place? No, unfortunately. While all Architecture exists in a place of some sort, not all Architecture contributes to our understanding of Place as Architecture or merely as humans. What types of Architecture can be considered Place? And why is it important?

This second section explores the creation of Place, how place is viewed in different contexts, and the defining of Place separated from space. As discussed in the previous two chapters, space is only a single aspect of Place, and to make this distinction more vivid I felt it important to look into how a place might be created

both inside and outside the physical realm. Looking at both architectural and literary sources, I create a strong foundation with which to examine what it means to create a Place within the context of architecture. Because physical space is - understandably - one of the largest ties between Place and architecture, the lack of physical space brings us to the conundrum of how we might tie these two subjects together without it. This brings up a secondary point of concern. How is architecture defined outside of physical space? The intangible nature of many studio learning projects served as the initial inspiration for this concept of Fake Place.

[3] DEFINING PLACE THROUGH ITS CULTURE

Talking about Place in a more global sense brings up the important point of Culture and its relationship to Place. Obviously, various regions of the world display an extraordinary range of cultures – and there are very visible relations between some cultures and the architecture created within them. This will naturally cause speculation that Culture should be considered when considering Place. And that is true, and it should come as a bit of a surprise that Culture is not delineated as one of the seven dimensions of Place which were outlined earlier. Culture relies on many of the same aspects – both tangible and intangible - as Place. Form, modes of occupation, ornamentation, and general rules of spatial design all inform Culture as well as Place. Culture includes many subtle dimensions that come solely from people. And, as a result, Culture places a much heavier emphasis on the traditions and social expectation that those who inhabit a particular Place express and expect, than can be described by any single person or perspective.

Although Culture is not considered an aspect of Place, because of the high amount of crossing information Place and Culture can be used as a means of exploring and understanding each other. Place informs culture and in return culture influences Place. This process leaves physical marks on each side of the equation. However neither, Place nor culture can be described as subservient to

the other. That is why culture is not – and never should be – considered as only a defining and subservient trait to Place. Culture informs us of Place.

Rome, Italy is known as one of the birth places of modern western civilization and Architecture. Some of the most celebrated architects, artists, and writers of the Renaissance era lived and worked there, leaving a vivid celebration of buildings which can be viewed in many varied ways today. While looking into how we can define a Place through its Culture, I thought it was important to use a place which has a long history of extremely significant and well-known influences within it as well as a large body of supporting information and clear records. This was important to me because by using precise information, the meaning discerned from Culture to understand Place becomes less muddy and clearly distinguished.

I chose for my selection of a building S. Ivo alla Sapienza by Fancesco Borromini which stands only a couple blocks south of the Pantheon in Rome. There are layers to both the place and its information which feed on one another and create complexity – once unraveled – that can help define the elements necessary to understand any type of modern location.

*Now try St. Ivo alla Sapienza,
The dome's a calibrated light condenser.
Geometry has lanced the site for pus
To spurt on God, but shower gold on us.*

The last stanza of Peter Porter's "In Ecclesia" (1999)

Historical Background

Francesco Borromini was born in 1599 in the town of Bissone, Italy with the name Francesco Castelli. In his youth he was apprenticed as a mason, which strongly influenced his later, spatial approach to architecture. He arrived in Rome in 1621 but continued to hold a modest position as a mason until the 1630s (“Francesco Borromini”, 1998). Borromini, along with his rival Gialorenzo Bernini is the most celebrated of Italy’s baroque architects. One of his most famous works is the church of S. Carlo alle Quattro Fontane. In it he expresses a sense of movement within the structure itself. This idea has become perhaps his most discussed stylistic expression. And, it is one of the many features that carried over into his later work at S. Ivo della Sapienza. The church is named after Saint Ivo the Bishop of Chartres, who was born around 1040ACE. He is known for his contributions to canon law and is the patron of barristers (Blumenkranz, 2007). “Barristers engage in advocacy (trial work), and only they may argue cases before a high court” (Merriam-Webster, nd). S. Ivo della Sapienza was originally built as a university chapel with construction beginning in 1642. This chapel is one of the best examples of Borromini’s love of geometry. Not only does it have a very complex floor plan, but that complexity was carried throughout the entire structure, including upwards into the lantern of the dome (Beldon, 1982).

Borromini is considered to be one of the greatest baroque architects of all time, not only in Italy but the whole world. His approach to baroque, although it

developed into a lesser-followed second branch, held true to the definition of baroque, just as Bernini's more widely expressed branch. In its most basic dictionary definition baroque is defined as having characteristics of artistic expression that use "complex forms, bold ornamentation, and the juxtaposition of contrasting elements often conveying a sense of drama, movement, and tension" (Merriam-Webster, nd). Borromini's development of "complex forms" and "contrasting elements" are the most definitive expressions of his architecture (Connors, 1996; Hrvol Flores, 2003). S. Ivo's sinuous definition of space is an excellent example of Borromini's contrast-based architectural concepts.

In this analysis of S. Ivo, five different approaches will be used to augment an understanding of Borromini's design, and to offer a more comprehensive vision of what a visitor will encounter. Although some common knowledge is used as a basis for all five of these approaches, the reasons for inclusion are judged individually for each section. This means that while some facts or observations might be repeated, that is only due to their importance to each approach individually. The first four of these approaches are those defined through art and architectural writing and analysis. A fifth approach has also been added due to the large amount of research based around speculation of the symbology used to define the architecture of S. Ivo della Sapienza.

Approaches

Historical

Pope Urban the VIII commissioned Borromini to design and build a chapel for the Sapienza University of Rome, which had owned and built on the chosen site since 1432. Urban VIII was a strong believer in Tridentine orthodoxy as well as had a lifelong interest in training priests and missionaries (Orlin, 1982) which explains his choice of location. The University of Rome was founded in 1217. It was built to teach and train for the Holy Orders, and even had a program specifically set up to bring in impoverished students who showed potential. S. Ivo della Sapienza was meant to serve not only as a chapel, but also as a setting for academic ceremonies. Because the school's function as a place for training students in canon law, these academic ceremonies more or less doubled as religious ones, making the requirements for S. Ivo's program very unique (Hrvol Flores, 2003). S. Ivo is situated in the courtyard of Rome's Sapienza Palace, built under della Porta from 1594-1597 ("Francesco Borromini", 1998). The parti of this design was introduced by Giacomo della Porta in 1581, before Borromini worked there ("Francesco Borromini", 1998). In della Porta's plans the chapel was to be located in the same location as it stands today, hidden behind a curving exedra. This curving exedra dates back even further before Borromini took over design of S. Ivo, and is initially ascribed to Pirro Ligorio in 1565. Ligorio's grand plan, however, envisioned not just one curved exedra but two; creating a circus-like area for the courtyard in front of

S. Ivo (Hrvol Flores, 2003). It was a full 70 years later when Borromini began his design because he was requested by the school itself, and then approved by Pope Urban VIII. Design of the church took place between 1635 and 1640, although completion did not occur until much later (“Francesco Borromini”, 1998). The dedication of the chapel to S. Ivo occurred on November 16th, 1660 under Pope Alexander VII (Hrvol Flores, 2003). Looking at a series of four plans for S. Ivo it becomes apparent that while some details and exact dimensioning were continually added or changed, the initial geometry of the space remained surprisingly similar to Borromini’s initial plan (Orlin, 1982). Within his plans it is also apparent that the symbology present in the form of the space was integral to understanding the building when it was built. The same understanding has become if anything, more important, to comprehending S. Ivo today.

Symbols abound in S. Ivo. Some of them are religious and historical references while others pay tribute to the political and religious powers of the time. The courtyard pays homage to the ancient gymnasium (Beldon, 1982). On the building itself, the figures referenced include the three Popes who were patrons of Borromini while he worked on the chapel. Pope Urban VIII of the Barberini family was the initial commissioner for Borromini to work on S. Ivo (Orlin, 1982). The Barberini bee is one reading of the shape in the six-sided floor plan, however, no other bees remain in the structure due to the second patron pope. Innocent X saw to the completion of the dome and lantern and homage to his family – the Pamphili – is in the form of a dove on the exterior (Smyth-Pinner,

2000). The eight-pointed stars on the exterior and oak leaves inside come from the Chigi family of Pope Alexander VII (Herz, 1989) who financed the final completion of the chapel and surrounding palace. Other references are more religious in nature. In particular the shape and decoration of the spiral lantern has been referenced back to descriptions of the Temple of Solomon (Orlin, 1982).

The jumbled construction of S. Ivo della Sapienza mirrors its complex history. Not one, but three successive popes tried to put their own personal stamp on a building designed for yet another client. The university's religious nature complicated the necessary functions of the chapel but provided Borromini with an intriguing conglomeration of symbology and architectural starting points. Borromini was able to successfully take all these external forces and combine them into a single seamless design that continues to spark discussions in art, architecture, and history which make S. Ivo an unforgettable building.

Experiential

Being only open to the public on Sunday morning makes the task of getting to Borromini's S. Ivo seem much more daunting than it truly is. It is located centrally in the historic district between the Pantheon and Piazza Navona, not even a full two minute walk from the Largo Argentine bus and tram stops. An unadorned wall blocks the inner courtyard from the street and hides S. Ivo even from those who walk right past it. But once inside, the façade of S. Ivo quickly

dominates its environment in a quiet, almost unassuming way. On first glance the odd twinge that comes from a more reasoned poking of the façade's partial mimicry of the surroundings is not noticeable — the slight offset in color or the filled in arches with windows that seem to have been stuck to the outside of the façade. No, standing in the courtyard at the front of S. Ivo is awe inspiring.



Figure 8. Courtyard view of S. Ivo alla Sapienza

That awe is directed at either one of two thoughts. First — this is a church by Borromini — *The Borromini* — one of the few architects whose name is known



Figure 9. An interior view of S. Ivo

even outside the rather cloistered whispering of the architectural historians; and second — how did he fit this chapel in such a small space? Because it looks cramped, not just boxed-in-by-others-building-around-it cramped, but truly and completely squashed between the hard rows of the colonnade which lines the courtyard. The façade struggles to fit in the space. It seems to bulge away from the courtyard as if it was originally built a bit too long. At the same time, the delicacy and grace with which it was accomplished is astounding. It holds itself ridged and smooth acting as if it is trying to lure the unsuspecting farther inwards. And it works. The less than perfect façade opens up into an exquisite interior. In his signature white-on-white, Borromini has worked magic with light. Shadows flowing over overtly large symbolic decorations make you feel small and insignificant. The shadowed recesses of the un-occupied niches expand the interior

out, then gather it back in. Everything is physically static yet in constant movement. The expansive reach toward the golden lantern almost spirals from the floor and draws a visitor's mind up and out.

Although the exterior façade is not particularly intriguing for a baroque building, the overall experience at S. Ivo della Sapienza is amazing. Borromini's continual motion and obvious passion for architecture are released upon the visitor. The interior is almost magical and makes the visitor stop and actually think about how the building physically exists in space.

*In the final composition
All eyes are turned up
And the ribs are showing through.
Is this the dilatation of wisdom
Or is it the fabulous triple echo?*

Excerpt from "Sant'Ivo Della Sapienza" by Philip Hodgins (1986)

Formal

The courtyard in which S. Ivo is located in was designed under Giacomo della Porta. Its structure consists of a three-story palace that surrounds the two-story courtyard in a U-shape (Smyth-Pinney, 2000). The only part which is allowed to affect Rome's skyline is the twisting spire. Main entry into the space is from the west (Smyth-Pinney, 2000). S. Ivo was designed on the east-west access which means that a visitor will be presented with the full façade immediately. The approach to the chapel is narrow due to the courtyard, but left otherwise open

and without a necessary path plotted for the passage from one entryway to the other. The façade itself is curved toward the interior of S. Ivo and this fact is plainly visible upon entry to the courtyard. Once a visitor progresses through the courtyard and past the façade, they will receive a shock. Because, the façade and the floor plan have no correlation to each other. S. Ivo's is a completely different building on the interior and the exterior (Smyth-Pinney, 2000).

Stepping in to the interior, a visitor is on axis with the altar. Due to the shape of the room, this sightline is the sole means of defining a main axis. The original side doors were meant to be access points from the side aisles of the courtyard. Today they are not publically accessible and lead to small rooms hidden in the curve of the façade. The interior design of S. Ivo della Sapienza was most strongly influenced by Borromini's structuring of the floor plan. It not only holds the starting point for the continuation of his twisting space, but the mathematical logic that shapes that twisting (Herz, 1989). Some claim that this design is based on an exaggerated bee in honor of the Barberini family whom Pope Urban VIII was a member of (Beldon, 1982). But another look at the plans shows instead that the completed shape – resembling a severely modified hexagon – is actually based on the interlocking of multiple geometric forms including a central circle with intersecting triangular extensions and semi-circular apses (Herz, 1989). He uses the contrast of opposites as a way to emphasis his resolution of these forms (Connors, 1996b). On three sides the floor has been cut out into the wall with a semi-circular apse. The other three sides are extended into abbreviated triangles.

The original starting point of the hexagon is visible for only a narrow portion of each wall. Each piece overlaps so greatly that the interior walls feel much more like curved pieces than the many straight edges which create the underlying form (Orlin, 1982). As stated by Carol A. Hrvol Flores “Borromini's ability to create the feeling of movement using the static materials of stone and brick is generally accepted as one of his most significant contributions to architecture” (2003, p.64).



Figure 10. The dome at S. Ivo

Not obvious in the floor plan alone is the fundamental structure created by six piers. These piers become evident in the plan for the drum and upper level of S. Ivo (Smyth-Pinney, 2000). The importance of these piers is shown in the interior dimensions rather than exterior for the design and layout of the dome and lantern (Hodgins, 1986). By 1655 cracks in the dome were so problematic that Borromini

had to fill in some previously open areas beneath it to strength the structure (Smyth-Pinney, 2000).

This sectioned dome and lantern are the most important exterior elements both visually and symbolically. The spire which is part of this section has been notoriously difficult to describe; in part, because it is made from many different elements. Elements which sit above the dome include the lantern, a spiral spire studded with jewels as if it was a crown, a wreath burned by a crown of fire, as well as a globe, and cross (Beldon, 1982; Connors, 1996b). There are no certain documents which can point to one specific explanation for this conglomeration of objects. Although there are many theories, including the suggestion that Borromini meant for a symbolic redesign of the Temple of Solomon (Herz, 1989). The design of the cupola was very unique at the time of S. Ivo's creation. Traditionally cupolas from the baroque era either followed the perimeter of the walls, or they were smaller, and bridged the gap with a series of other architectural pieces. This is not the case in S. Ivo. The six petals of S. Ivo's cupola are larger than the original hexagon. Instead, the connections between lobes are set at the edge of the hexagon, and each lobe extends from there. This means that its overall size can be much larger than any which followed conventional designs within such a restricted space (Smyth-Pinney, 2000). Borromini's "Pumpkin Dome" follows the structure of more ancient examples, such as the Mausoleum of the Calventii which consisted of six brick and concrete apses (Smyth-Pinney, 2000).

Interior decoration is relatively minimal in S. Ivo della Sapienza. Each decorative element is of enormous proportion, but considerably conservative for a building of the baroque era. Borromini himself chose a white-on-white interior scheme. Many of Borromini's designs were very stark in both color and décor, which allowed the structure to speak for itself. It also, however unfortunate, was strongly reminiscent of protestant religious architecture of the same time. This explains why Borromini stands out in the baroque period, in part because other architects were more likely to follow the stylistic approach of his rival Bernini which was very opulent and grand in a way almost opposite to Borromini.

Formally S. Ivo della Sapienza is a successful chapel. The interior and exterior geometry are interesting and stable. With many architectural details it provides enough interest to keep a visitor's attention even with its relatively sparse decoration and color scheme. A visitor to the site is drawn into the space, and wants to stay there once they are inside.

Activist

S. Ivo is a hidden gem of Rome. Although it is a well researched, thoroughly documented and fully enjoyed building, it is not obviously in the public eye of a city with churches and chapels on almost every street corner. It is hidden away in a courtyard of the Sapienza University. The Sapienza University was the client, although the patrons of the project were the Popes, so it does makes some sense

that S. Ivo would be designed to cater to the university. Today however, S. Ivo is only open to the public on Sunday mornings from 9 to 11 am. With only a plaque on the exterior wall of the courtyard to denote where it is located a visitor who knows where to find it can still easily walk right by. In this sense it does not relate back to the community at all. There is a lack of engagement with the surrounding urban fabric and S. Ivo has produced its own isolated existence. There are, however, ties to the university. Although there is not a direct connection to modern visitors in this manner, those who would have initially worked on and visited the chapel would have been able to immediately interact with S. Ivo through the symbols present. One is the symbology of Pentecost. When students graduated, it was traditionally during the week of Pentecost. The dove surrounded by twelve tongues of fire – which are shown in twelve lines of Chigi stars in the lantern – are traditional symbols of Pentecost. The university itself is named after the Divine Wisdom granted on Pentecost to the Apostles (Hrvol Flores, 2003).

Other ties as well exist to the patron popes through the concept of the building and the realization of the plan. For example, in initial plans the floor plan was drawn with a strong hexagonal center that was used as a starting point, and it was associated with the Barberini family by word-of-mouth if nothing else. Later, when Innocent X took over, the drawings of plans which would be shown to the patron were changed to more explicitly represent the plan as triangularly based. This in a sense wiped away any chance of a Barberini bee stylized floor plan (Smyth-Pinney, 2000). It is interesting that in his plans he would purposefully draw

either inaccurate or cropped images or images with specific emphasis on pieces in order to please whichever audience was meant to see it. His personal working drawings were accurate in a way his presentation to the public was not (Smyth-Pinney, 2000). A little bit of this continues on today, with S. Ivo's interactive ability now at least partly hidden or lost from the public eye.

When looking at S. Ivo with consideration to its social and urban contributions it is necessary to also consider two distinct time periods. When S. Ivo was built it was designed to specifically meet the needs and desires of both the patrons and the client. The space is tied to them in design and in decoration. In that sense of the public, S. Ivo della Sapienza interacts positively and completely. However, there is a different story when you consider S. Ivo in its contemporary setting. Today it is very much detached from the surrounding neighborhood. It is not immediately inviting nor is it easily relatable to the visitor who does manage to experience it. It is a beautiful building still, but it does not have the same interactive ability when the casual visitor will not know how to read into the meanings behind each decoration or the curves of the dome.

Symbolic

The symbology of S. Ivo is a highly debated topic. Some claim that the designs relate most directly to the patrons, such as the Chigi stars that decorate the dome, and the Barberini bee which is highly stylized into the hexagonal floor

plan. Many parallels have also been drawn between Borromini's designs and references to biblical figures, Solomon in particular. The chapel of S. Ivo della Sapienza was made as both the chapel and the stage for academic events of the University (Hrvol Flores, 2003). Because the university was a religious institution — to train and ordain young and impoverished men — one of the most important events held at S. Ivo was the ordaining of graduating students. This typically occurred during Pentecost, which is associated with Divine Wisdom. This association with Divine Wisdom also occurred with the Barberini Family to which Pope Urban VIII belonged (Orlin, 1982). Therefore many references can be accredited to this starting point. Other references as well are attributed back to Solomon and to his temple, which are both related to Divine Wisdom and to Pentecost in a variety of ways.

Starting from the ground up, there is one theory about the floor plan of S. Ivo which relates to Solomon is particular. The star of Solomon — although never shown in a drawing fully attributed to Borromini — is a popular reading of the configuration of apses and triangles (Smyth-Pinney, 2000). The key of Solomon can also be read into the floor of S. Ivo, in one of its incarnations of a circle inscribed with a triangle (Orlin, 1982). As Kevin Johnson quotes in his article — “In Ivonem Explanationes: The Meaning and Purpose of S. Ivo alla Sapienza” — the Bible states of Solomon's Temple that “And [Solomon] carved cherubims, and palm trees, and carved work in relief...” (1982, p.97) which resemble the decorations of the interior dome of S. Ivo as well (Hrvol Flores, 2003). The lantern is also related

back to Solomon in one of its most popular interpretations (Herz, 1989). Another explanation relies on a mixture of imagery that relates to Intellect and Philosophy. The spiral becomes a spiral stair leading to the flames which represent the “natural desire to know” (Beldon, 1982, p.303). Both intellect and philosophy can be related back to the university as a place of learning and teaching. In a description by Borromini, the spiral is referred to instead as a bejeweled crown (Beldon, 1982; Connors, 1996b) bringing the triple crown of the patron popes to mind rather than the client. The spiral itself looks similar to a conch shell, although that interpretation is not as highly regarded; it can also lead back to the patronage of the popes through a family of conches including the *mitra papalis* (Beldon, 1982, p.307). The flames crowning the tip of the spire likely alludes to S. Ivo, the saint which the chapel is dedicated to. His chief virtue was charity, often represented by the flaming crown.

With so many interpretations of the symbols present in the architecture and decoration of S. Ivo it is almost impossible today to know for sure which approach was in fact Borromini's. To the casual visitor the building might appear stark inside, but one thing that can be told for certain is that this is a building steeped with depictions of faith and power — both holy and secular. Each group associated with the building was able to influence it in a way that can be still read — if a bit jumbled — today. Borromini was able to bring the many different elements of the decorations and make them a cohesive whole. There is no suggestion of

randomness or hurried rearranging, just a single cohesive structure that has quite a few stories to tell.

Conclusions

In his design of S. Ivo, Francesco Borromini expresses a conscious link from the past to the present within in his references of design and symbology. That connection continues into modern times. Although his method of expression was seen as revolutionary at the time, the ideas he represented were age old. His love of mathematics can be seen in the attention to every angle and measurement. Symbolism is present throughout the structure, in the décor and the floor plan and even the entire shaping of the building. Symbols abound and yet the building only speaks to those who can read it. S. Ivo has inspired discussion since its creation about both its structure and its symbols. It interacted continually with those around it at its birth. Today S. Ivo has started to fall away from the public, but when it catches a visitor, it can still hold them motionless. Its depth continues to insure that S. Ivo della Sapienza even with its distance, will function as a testament to Borromini and the finesse and complexity of baroque architecture and politics for years to come.

[4] ATMOSPHERE, LIGHT, AND THE SENSES

“Atmosphere is singly an exchange between material or existent properties of the place and the immaterial realm of human perception and imagination”

— Juhani Pallasmaa in a lecture at IIT Chicago (2011)

Although atmosphere has a direct link to the physical form of a building and its context, looking at only these aspects limits atmosphere to its most shallow understanding. Atmosphere is built upon Space, Mass, Material and Time — but it is something different that encompasses and modifies each of these understood categories. There are many more pieces that filter in along with the physical to create a Place’s atmosphere. Atmosphere can be described as the usually intangible characteristics which, when layered with physical characteristics such as materiality, texture and form, create the environment that can be uniquely described as a single Place. Perhaps the most noticeable is the play of light and shadow.

Atmosphere is all about the creation of an experience. However atmosphere is not the *same* as experience. Atmosphere can encompass a personal point of view or description, but it still exists outside of it. Though for the most part intangible, atmosphere is still a physical and definitive reality, not an opinion. Only how it is perceived and represented can be considered individually.

Background

Because optically gained information so heavily biases our perception, many aspects which delineate a Place, and in particular it's intangible atmosphere, draw on visual stimuli (Jastrow, 2014). But, as discussed earlier, the atmosphere of a Place is its intangible character. Atmosphere is the summation of all the small and often only partially describable nuances which are drawn from perception. These can be purely descriptive or qualitative elements or they can have quantifiable characteristics. There are two main categories for these features: they can either exist within the architecture itself or they can be part of outside forces that interact with the architectural mass.

One of the most prominent examples of this first case is information gathered from texture. While texture is also classified as a material property and predominantly a tactile set of information, it crosses over into the visual realm and imparts valuable knowledge about material properties that drastically change how a structure or piece of decoration is perceived (Shirazi, 2009; Pallasma, 2000a). For example, take the difference between a steel railing and a wooden one. While both can be the same size, shape and general form, they give the space they are in a completely different impression. Smooth and reflective silver metal has a completely different texture from the warm, rough look that wood grain grants – and that helps to create a completely different atmosphere as well. Texture is part of material choice and it can be openly expressed or exaggerated

as well. Placing two or more contrasting textures close to each other brings increased notice to previously insignificant seams within the whole – and this is part of why many modernists tried to simplify their color and material pallet down to only a few materials in stark white and monochrome. By decreasing the possible textures, the masses themselves where pushed more prominently into the foreground and the statement created with space itself became bolder.

The second category of interactions deals with elements such as light, which can be easily considered one of the most important influences on architecture. Throughout the history of man creating Places, or simply spaces which cared for (and covered) more than just the most basic of necessities for survival, there has been an influence and often heavily focused study on light within the built environment. How does light affect architecture? There is almost no aspect of architecture that light does not affect. Light itself is also unique in that its most definable characteristics are split between those which are quantifiable and those that are qualitative: heat, brightness, contrast, and clarity are only a few.

Light in Architecture

More recently, when discussing light in architecture, conversations often move towards sun diagrams, heat gain, sun screens and other similar topics that follow the current eco-trends in architectural design (Brzezicki, 1997). These,

while important, cover only a fraction of light's true importance to the field. Architecture is essentially something created with all three dimensions in mind. Even 2D media, such as pencil or ink renderings take into account ideas concerning overlap, perspective, and solid-void relations. These characteristics are both directly affected by, as well as portrayed through, the play of light and shadow in both created space and the environment surrounding it. The whole perception of any 3D mass can be dramatically changed depending on how it is lit and if that lighting is consistent or changing over time. Some of the most intricate examples of lighting and its effect on architecture in western practice can be seen in religious architecture. Take for example St. Ivo alla Sapienza, which was discussed in Chapter 3. The entire interior is pure white except a few of the details (such as a golden dove at the pinnacle of the dome). The light and shadow are what define the space to any visitor – without such careful consideration as Borromini put into it there would be no purpose to the Space or Place. That powerful statement in much of his work is what gives his richly detailed work the definition and impact it needs. The light itself is also important for another reason, which it shares with many other spiritual Places – it is perhaps the most prominent symbology within the structure. It completely overshadows the not-so-covert symbols present within the carvings and icons. Light is such an essential part of everyday life – even ignoring the often important symbolism it can bring; such as the previous example. How a space is lit can either focus or disperse attention. Spot lighting will automatically bring eyes to bear on a specific spot, and that is one reason spot lighting is used so commonly in both museums and sacred spaces.

In the design process itself, light is important. Natural light produces the most relaxing environment to work in (as opposed to harsh flood lighting or dim “mood” lighting). The human eye can best discern color in natural light, which can be very important to the creative process for most design-related professions, including architecture. In architectural manuals and regulations the number of foot-candles in each area is often discussed. Certain levels of activity require a certain number of foot-candles to be able to see with precision enough for the task.

With natural light another concern is how far into the space the light will reach. A common diagram used for both studying as well as sharing this information is the sun diagram. Having a pure glass façade, while frequently used in the construction of office buildings and high rises, is often a very bad idea. Glass itself has a very low resistance for temperature, which means that both heat and cold easily pass through it and into – or out of – whatever the glass separates. Heat gain through sun can be a particular problem. How this is addressed can completely change both the feel and the appearance of a Place. These measurable and quantitative characteristics of light are not the most important features however, when it comes to defining the atmosphere of a Place. Instead, more subtle and qualitative information creates the basis for many of our impressions and memories of experience (Barash, 1997).

While light is undeniably important to the perception of any space or place, light is far from the only intangible medium architecture interacts with. Architects often focus on light as the primary source of Atmosphere, perhaps because light can be described through many different quantifiable traits. This causes it to be the easiest to study the effects of. However, intangible media are by nature hard to measure or describe with any concrete quantitative analysis. While sun diagrams might measure the distance into a room the sun gets, or footlights measure the brightness of a light there is nothing that can singularly describe light and its affect on its environment; nothing which states ‘this is light’ clearly or concisely. Atmosphere, and the elements which form it, are objective. They vary from person to person and day to day even within the same small section of any particular Place. Concepts such as the pressure exerted psychologically by a Place or the difference that a slight change in ambient temperature makes in any experience is often hard to place into words nor does it lend itself well to quantifiable tests when referring to the particular traits that feed into atmosphere.

Phenomenology

Phenomenology can be seen as an investigation into the emotional and cognitive connections felt with a Place rather than the physicality of it. The study of phenomenology relates to the larger field of Philosophy. According to the Stanford Encyclopedia of Philosophy, *Phenomenology* is “the study of structures of

consciousness as experienced from the first-person point of view” (Smith, 2003). In other words, it is the experience of a site – the experience which each individual person feels and reacts to that creates their own impression of that Place. When discussing phenomenology in relation to architecture, the term comes to mean a slightly more narrow perspective by tying directly to the physical reality of a Place as well. Phenomenological architecture looks at built space through sensory information and a discussion of phenomenology in architecture closely relates to discussions of the atmosphere, environment, or character of a particular area or building. Perception and its effect on cognition play a significant role how the world is experienced (Barash, 1997), which is of utmost importance to the architect who is creating a Place designed for certain groups of people or activities. The type of information discussed in a phenomenological approach to architecture is absolutely necessary to understand how a created space will be received and used throughout its lifespan.

Philosophical

Although this chapter talks about phenomenology and its relation to architecture and architectural reasoning, phenomenology is still part of the study of Philosophy. To understand it, it is important to first go over some of the theories and people who have defined how phenomenology is accepted today. The study of many of the atmosphere-centric characteristics, and the person-space relationship that those characteristics promote was first introduced in the philosophical field.

Modern theory is mostly attributed to Martin Heidegger. In his work, the term *place* holds a very loose definition. He describes a Place as any spot which is delineated due to a decision separating it in some fashion from all the area around it (Heidegger, 1982c). This can describe a particular landmark, such as his much-used example of a bridge, where the bridge's location at a particular spot causes that area to become the place-of-the-bridge; or a more abstract location, such as choosing to sit in a particular spot during a picnic because it affords the best view for people-watching. The location used for the picnic can then become the place-where-I-sat-during-the-picnic-and-watched-people-walking-by place (Heidegger, 1982c; Sharr, 2007). This second example in particular relies heavily on both memory and time. Also, as illustrated again by the second example, a Place does not need to be a location which has meaning to every single person who goes through that location. The picnic spot will only mean something to those people who were at that specific picnic and most likely no one else. Place is created through a conscious acknowledgement of an existent factor, which can be physical as well as social or cultural.

A more contemporary look into philosophical thought by Edward Relph seeks an increasingly concrete definition for the term *place* as well as attempts to answer the question of how it might be experienced through the senses. In his work one of the most important ideas he covers is that of Placelessness (1976a). One aspect of Placelessness is an inauthentic attitude towards place. He defines this as “...no awareness of the deep and symbolic significances of places and no

appreciation of their identities” (1976a, p.82) – an inhabitation of space that loses all sense of Place and attachment to it as place.

Relph also holds importance as an intermediary between the philosophical and architectural approaches to phenomenology. Similar to Christian Norberg-Schulz (discussed below), Relph takes many of the ideas presented by Heidegger and others and applies them in a more colloquial manner. Heidegger’s philosophical exploration of phenomenology is both theoretical and very much thought-oriented as opposed to rooted in the physical world (Wheeler, 2011). All types of phenomenology have some aspect of this simply because the nature of the subject matter, however with Architectural Phenomenology it is also essential to not ignore physicality in favor of thought.

Architectural

Many of the ideas of phenomenology, including those of Heidegger and Bachelard, have been translated into a more architecturally relevant context in the work of Norberg-Schulz. In particular, his book *Genius Loci* goes into great depth on both the importance and relevance of phenomenology. The phrase “Genius Loci” comes from the Roman belief that every object has its own character or spirit, literally everything was alive in some form (Norberg-Schulz, 1980b).⁷ *Genius* comes from the Latin word for “spirit” while *Loci* literally means

⁷ This viewpoint helps explain the expansive pantheon of gods and goddesses featuring in Roman mythos as well.

“location”. Interestingly, Norberg-Schulz divides the traits of a Place into two categories: “space” and “character”. *Space* is the defining physical characteristics, while *character* denotes its atmosphere, or insubstantial characteristics (Norberg, 1980b, p.11). Light is mentioned as one of the four characteristics which defined the architecture of early civilizations, along with order, character, and time (1980b). These four characteristics are also given the important role of defining the meanings associated with any man-made Place. Norberg-Schulz created a precedent for phenomenological thinking in architecture which continues still.

Two of the most prominent modern proponents of architectural phenomenology are Juhani Pallasmaa and Peter Zumthor. Pallasmaa is known for one of the five initial theories of place and architecture discussed in Chapter 1 of this research. While much of his published work discusses both touch and time in great detail, he has not ignored the concept of atmosphere. In a recent lecture at IIT in Chicago, Pallasmaa stated that atmosphere is not something which can be perceived through precise and conscious observation – rather “it is perceived in a defused and peripheral manner” (2011). Pallasmaa also discusses different levels of atmosphere, including what he calls “inter-personal atmosphere” which is the relationships between people, that can be expanded to include scales as large as complete cultural/geographic regions (2011).

Zumthor, a contemporary of Pallasmaa, has also published material that discusses the phenomenological reasoning behind his own thought processes and design decisions. In his book *Thinking Architecture*, Zumthor discusses multiple memories of place and how they have affected his work today. At the very beginning he describes what to him has become the essence of a traditional kitchen (1998b). Few of the factors he mentions are physical – and when they are, they are mostly those that are much more qualitative in nature. This does bring up an important point: one misunderstanding about architectural phenomenology is that it only refers to works where the space being inspected either heavily references the past or tries to mimic traditional methods. Phenomenology does not limit the design process – even buildings designed in a completely modern context and with modern methods and materials can retain that sense of uniqueness which characterizes many of the qualities described by phenomenology.

Case Studies

Atmosphere is linked to the emotional impact of Places, with particularly heavy connotations when a Place is one that is being experienced for the first time or seen/visited without prior memories and attachments in place. Emotional connections to architecture and Place can be naturally formed as well as stimulated by the Place itself. What exactly does all of this mean though?

Sacred architecture has long been a focus of patronage, time, and money. Some of the most impressive examples of materiality, form, and the extremes to which they can be pushed exist in the form of sacred architecture. These examples are limited to just physical qualities. As mentioned earlier, light also plays a major role in many of these spaces – how they are perceived, the experience of them, what draws attention and what is quietly hidden away. Light is also often regarded with strong symbology particularly in sacred spaces with a connection to the heavens and the divine. All these pieces of information – both social and solely sensory based - are filtered through our senses, and our senses are affected by all the different qualities that can be associated with light.

S. Ivo della Sapienza by Borromini

S. Ivo della Sapienza can be considered one of the classical examples of sacred architecture. Built by Borromini from 1635-1640, this chapel sits in the heart of Rome, Italy (“Francesco Borromini”, 1998). As discussed in Chapter 2, Borromini himself did not start as an architect, however, when he designed S. Ivo his reputation was well known at this point in his life and career. His designs were based around geometry in both plan and section, as well as the interplay of light and shadow. His churches were some of the first buildings purposefully designed to be pure white in color on the interior as well as the exterior. It was even more unusual considering the baroque nature of the design. But, this purely colored

interior makes an ideal case study to look at the effects of light on spatial geometry and as a standard for other case studies.

The experience of S. Ivo della Sapienza starts in an exterior courtyard which funnels visitors into the chapel. The double story loggia on three sides means that while light reaches the courtyard during midday, it is often lit less directly. The interior of the church curves in and out (Herz, 1989), allowing gathered shadows to flow around the base of massive symbolic statuary, while higher up, bright white light streams in from clerestory windows. The gilded pinnacle of the interior dome stands resplendent and perfect. It glows in the light that wells up around it in high contrast to the base where lowly visitors reside. The interior forms are highlighted by the rising and falling of the shadows' sharp contrast. Automatically attention is drawn upwards in the space.



Figure 11. The light of S. Ivo's dome

The dramatic rise of the height is accented heavily by the light and shadow, and all the definition of the space comes from how the light hits each carved object and curved wall. It is not the windows themselves that are important so much as their placement. The panes are a simple transparent glass. No colors are added to the interior with exception of the gilded lantern of the dome.

Chapelle Notre Dame du Haut at Ronchamp by Le Corbusier

The Chapelle Notre Dame du Haut at Ronchamp was one of the buildings that earned Le Corbusier his high status in the architecture community. Before he was granted the commission for it, he was still very much on the edge of the architectural profession. Le Corbusier was still considered a utopian city planner at that point in his career, which is strongly reflected in his *Toward a New Architecture*, published in the 1920s (Taylor, 2008). There were many concerns that his approach to what was a traditional pilgrimage location would be completely unaccepted by the public. In fact, there was such an uproar over his design that members of the community of Ronchamp sent letters to the Vatican in hopes of stopping the project (Taylor, 2008). However, Notre Dame du Haut was re-opened in 1955, and it was accepted as soon as it was experienced.

The appearance of the Chapelle is far from traditional sacred architecture and does not reflect any of the previous buildings on the site, although it does

reuse many of the old stones from its most recent predecessor. A sloped “shell” flamboyantly caps a set of four curving walls to form a series of spaces that transition from exterior to interior. The interior itself is minimalist. Not only light, but color as well, streams through the deeply recessed windows that seem to be cut straight out of the walls; brilliant red, blue, green and yellow light the interior of Notre Dame du Haut from the colored window panes (Taylor, 2008; Corbusier, 1957b). The south wall is another point of interest. This wall has been honeycombed by windows of various shapes and sizes which filter light through colored glass and bring modern images of classic symbology into the church through painted drawings on some of the panels (Corbusier, 1957b).

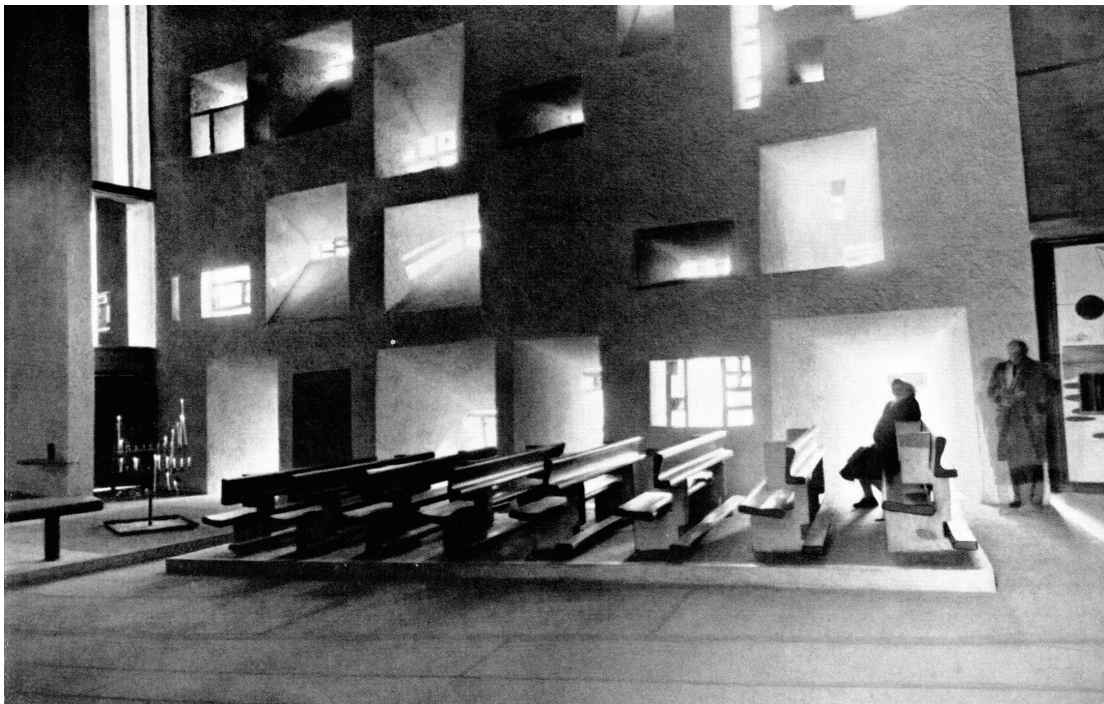


Figure 12. Interior view of Ronchamp's southern wall (Corbusier, 1957b)

The transition from the exterior is the origin of the interior experience. The interior lighting is a completely different experience than the exterior, forcing visitors to take a minute to adjust before they can truly enter the relatively simple interior (Taylor, 2008). In an explanatory publication on Ronchamp, the lighting condition is described thusly: “There are numerous wall openings. The statue of the Virgin Mary is surrounded by a constellation of stars comprising wall openings, the walls separate above the doors, and concrete fins filter the light...” (Taylor, 2008, p.69).

The shell roof is actually held up on a multitude of smaller pillars which have been hidden within the walls, allowing thin cuts along the very edge where the two forms meet which creates an illusion of near impermanence. Within his writing on Chapelle Notre Dame du Haut at Ronchamp, Le Corbusier includes a poem with a first stanza reading (1957b, p.27):

*The key is light
and light illuminates shapes
and shapes have an emotional power.*

This sentiment describes most of Le Corbusier’s work, not just the Chapelle. He believed pure geometric forms to hold the most significance and often used different means of natural light to highlight the very 3D buildings he designed.

Unity Temple by Frank Lloyd Wright

Like Notre Dame du Haut, Unity Temple was built to replace another sacred space which had burned down earlier. However, Unity Chapel, which it was meant to replace, was not on the same location, and materials were not re-used. Unity Temple is also not a traditional sacred space. There is a distinct lack of traditional or prominent religious symbolism, and the building was designed without one of the most classic features, a bell tower or steeple (Cannon, Wright, and Caulfield, 2009).

The exterior appearance of Wright's Unity Temple is completely different from the smooth curves and organic shell of Notre Dame du Haut. This monolithic building sits solidly as a single concrete mass, and is considered the first concrete monolith in the world when it was formally dedicated in 1909 (Cannon, Wright, and Caulfield, 2009). To reach the interior nave, it is necessary for visitors to turn around corners and walk down more than one hall before they enter the cloisters which surround it. The interior continues the straight edges of the exterior but is both warm and inviting with its soft luminance and natural colors. The glass panes throughout the building are made of art glass, often mimicking natural forms such as leaves and tree branches through geometric patterns, and this holds true even through to the skylights (Cannon, Wright, and Caulfield, 2009).

The light in Unity Temple comes from a number of sources from near the top of the room, creating a dispersed and gentle glow throughout. Clerestory



Figure 13. Lamps in Unity Temple

windows are placed between columns on the exterior of the building under a five foot overhang in the roof, and the ceiling is a five by five grid of recessed skylights that give the light a golden glow (Cannon, Wright, and Caulfield, 2009). Artificial lights do hang from the corners of the room as well as add additional light around the podium. Their design mimics that of the skylights and they blend seamlessly into the whole.

Looking at all three examples, there are some aspects which have been treated surprisingly similar. For example, the variation between interior and exterior lighting conditions was handled in a similar fashion for all three spaces. While S. Ivo was decidedly brighter once inside compared to either Unity Temple or Notre Dame du Haut, the light inside was dimmer and more focused than the exterior. There was also a progression through all three spaces which includes changes in lighting or contrast. The most sacred area within each was highlighted through the use of light, and overall light contributed as either overt symbology

or as a way to highlight other elements which had important symbolism to those who use the space. An idea of transcendence of lightness in a spiritual sense is also undertaken in each of these spaces. All of them use indirect lighting to gather natural light and filter it into the space. And every single one of these buildings uses light to draw attention upwards, reaffirming the connection between light and the heavens.

Both Unity Temple and the Chapelle at Ronchamp are very non-traditional takes on a sacred space. And, while they were built by two very different architects and in very different architectural styles, they have remarkably similar stratagem with regards to light and its effect on the space as a whole. Both Le Corbusier and Wright bring in light from multiple sources and angles. They filter this light through both window size and shape and through the window materials themselves. Colored glass is strongly accented, although each design uses this for a different purpose in the overall scheme of the building. And, both these buildings – built within the last century, with modern materials and non-traditional styles - are not only well accepted in the architectural community, but continue to draw visitors and parishioners as Places of worship, architectural and otherwise.

There are also some instances where these spaces differ greatly. For example, while there is a progression to each space, the type of progression is very different, and lighting plays a very different role in Notre Dame du Haut then

in Frank Lloyd Wright's Unity Temple. In Notre Dame du Haut the difference in brightness between inside and outside hits visitors across the head. It is loudly stated that this interior space is a completely different Place than the exterior of the building and this is done through the dramatic cut in lighting when visitors pass through the building's frame. Unity Temple – while the shape and size of the windows change throughout the progression from exterior to the interior sanctuary, and the lighting condition between interior and exterior differs, the progression once the first threshold from exterior to interior is crossed relies more upon the feeling of compression and release that the interior masses themselves cause to occur. The light is much more ambient than dynamic. In S. Ivo the symbolism of the light is glaringly obvious. It was supposed to be very easy to understand and have a particular overarching presence within the interior of the space. Both Unity Temple and Notre Dame du Haut tended to be more subtle instead. They play with softer, filtered and colored light. While there is a particular upwards expression to their lighting schemes, neither of them is quite as obvious as S. Ivo della Sapienza.

Conclusions

The idea of “transparency”, or “light architecture”, has been increasingly demanded in architecture. The term *light architecture* refers to a dual meaning of both allowing natural light through the materials as well as the visual “lightness” which systems such as curtain walls impress upon viewers (Brzezicki, 2013). With this in mind, looking at light and its role in architecture, a phenomenological

design is not only essential, but also something to be continually reformed.

Ignoring the information provided by this point of view can also lead to stagnation

and a lack of thought directed toward light. With regards to light, the

colloquialism “too much of a good thing” is most certainly true. Like most

dualities, light needs its counterpart and a sense of moderation to further define

itself. Careful and thoughtful consideration of this balance creates Places of

interest and contemplation. Light is a definer of space and mood. Understanding

how light can affect a Place is also a starting point for the exploration of other less

well-established and intangible phenomena such as air pressure, and ambient

temperature. They are all insubstantial, but how they are treated in architectural

design and understanding is absolutely vital to how a Place is understood. Our

presence of space is defined through our perception of these phenomena and that

is the very basis of Place.

[5] Fake Place

Fake Place can be considered a sub-category of a broader topic of “non-places”. It includes not only places which do not exist for a variety of reasons, but also Places that — while physically present — are overlooked or ignored on a regular basis.

Utopia

When talking about Fake Places in relation to Architecture, the first example that comes to mind is the idea of “Utopia”. A Utopia is by definition a place which can never exist in a physical reality. It is and always will be a fantasy to dream of — an existence where everything is perfect⁸ (Greene, 2011; Vieira, 2010). The phrase “Utopia” was first coined in 1516 by Sir Thomas More as both the title and subject of a novel describing an island where everything was perfect. Although the concept has long been present in almost every culture’s literature and lore, this was the first instance of it being given both a solid definition and a unique name. Originally More used the word “Nusquama” which is based on the latin word for “nowhere” (Vieira, 2010). If this had moved forward, the concept which we now know of as “utopia” would likely not exist. Because the word Utopia was created as a unique concept, and not linked directly to such a limited

⁸ The word *perfect* brings around its own problems because of the commonly held belief that ‘perfection’ is in the eye of the beholder. While that may be true, the idea behind utopia assumes that a ‘perfect’ reality can be reached which will satisfy any and all people whom inhabit it. Of course this assumption is one of the reasons why utopias are for all intents and purposes impossible.

definition at its moment of creation, it has the ability to be further defined by the words coined around it. This includes the much more recently coined “heterotopia” which interestingly enough can be related more directly to “nowhere” in modern terminology than the modern definition of utopia (Foucault, 1986). Like Heterotopias, there have been many offshoots from the standard definition of Utopia. Sir Thomas More himself created the concept of “eutopia” as the first subcategory, which was introduced within his novel “Utopia” as part of a poem describing the island. Eutopia is defined as “a good place”. By creating eutopia, More modified the original idea of utopia to no longer include the necessary stipulation that a utopia is a good place; instead utopia is a place undefined by its perceived “goodness” but by its ability to reach a particular type of perfection (Greene, 2011; Vieira, 2010). The addition of eutopia therefore also opened the door for its opposite: dystopia. Unlike its more classic opposition, dystopias are a satirical or critical look at current political and social systems, and dystopias are now one of the most popular sub-categories for modern literature.

So far all talk concerning utopias has stayed within the realm of literature, however, this does not take into account the many other expressions of utopia; including architecture. The perfection of Utopias has often lured architects. Both Frank Lloyd Wright — Broadacre City — and Le Corbusier — The Radiant City — are well known for their attempts at popularized utopian urban planning, including extensive sketches as well as published books or essays on the subject. While it is true that both Wright and Le Corbusier wrote extensively about their utopian

schemes, that writing was neither in traditional literature form nor was it writing which stood alone. Both schemes relied heavily upon many sketches, diagrams and other representations. The manuscripts simply provide the foundation for their visions through the ages.

Broadacre City

Broadacre City was a project designed by Frank Lloyd Wright as a new type of all-inclusive suburban design and published in 1932 in an article “Broadacre City: An Architect’s Vision” (“Frank Lloyd Wright”, 2015). He continued to develop the concept further in multiple books and essays until 1958. The theory behind Broadacre City was to accommodate the ideal American society, a loose settlement pattern made possible by the automobile and the telephone — an idealist precursor to modern suburban life (Wright, 1935b). Broadacre was a movement toward what Wright termed as “forms nearest organic” that would naturally fit into human growth (1935b).

Frank Lloyd Wright himself grew up and lived most of his life in the midwestern part of the United States, and it is clear that this had a large impact on his view of Utopian living. Broadacre reflected the idealized American Dream of individual independence that drew so many immigrants to the United States. Unlike Le Corbusier, Wright wanted a dissociation from the urban center (Wright, 1935b). In his plan, every family was to receive an acre of land minimum, more

space to be given to larger families. The idea being that by providing land to each citizen, many of the social and economical problems could be smoothed over. Wright disagreed with the idea of complete standardization. While some standard pieces would be completely mass produced in compact units, the overall ability to vary within given specifications was encouraged and provided for. Everything in Broadacre City was funneled through the idea of natural growth (Hertz, 1995; Wright 1935b). Organic composition is assumed in all the built environment, and patterns follow natural rhythms. Because of his desire to decentralize, Wright also proposed the creation of everything in many small pieces – so that everyone would have a bit of everything over a large area (1935b). This is nearly the complete opposite of Le Corbusier's idealized city state, which will be discussed below.

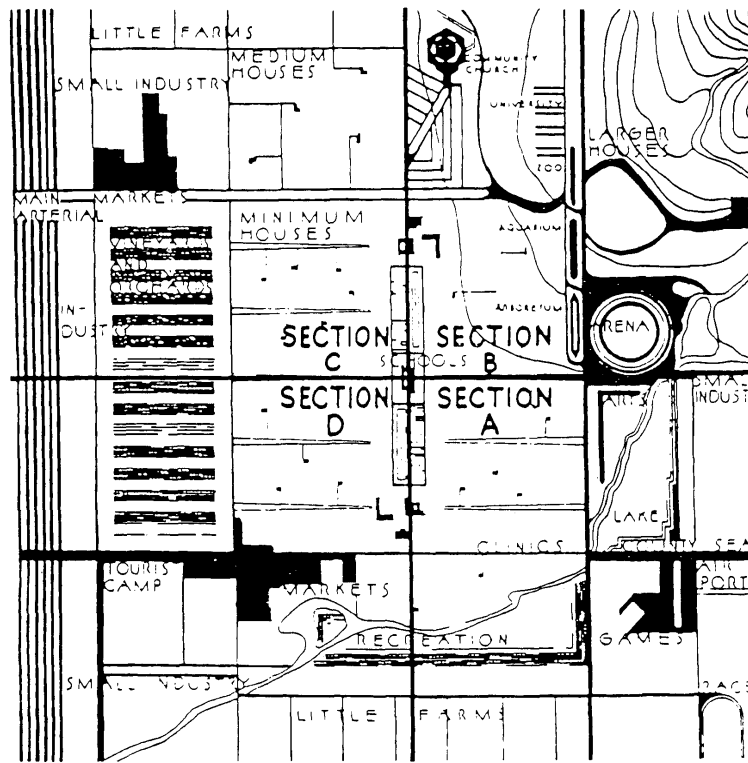


Figure 14. Broadacre city plan drawn by Frank Lloyd Wright (Wright, 1935b)

At the very center of his model showing 4 by 4 square miles, Wright placed a grouping of art, culture, and educational buildings. This was the heart of his design: individuality was promoted, and individual success provided for. Broadacre City is designed for the perfection and growth of the individual, rather than the attempt to design a perfect system which the individual is fit into (Dougherty, 1981; Wright, 1935b). Looking at his sketches and maps, it is clear to see Wright's work towards harmony between architecture and the land as well as his eastern influences.

As a method of proving the feasibility of Broadacre City, Wright designed and built a series of Usonian homes, which were small, functional and keeping very close to his idealized vision of affordable, and organic architecture (Sergeant, 1976). Wright's Usonian homes were considered successful individualized pre-fabrication. Each one unique, but the materials and parts were easily mass produced. His home and workshop at Taliesin West in Arizona provided a small successful community based around his plans for Broadacre (Dougherty, 1981). However, Wright was not able to build enough support to implement any widespread changes throughout the United States. Broadacre City has endured as an iconic architectural utopia.

Radiant City

Le Corbusier published his initial designs for the Radiant City as part of his book *Vers une Architecture* in 1923. The Radiant City, like Frank Lloyd Wright's Broadacre plan, was built around the new mobility that automobiles introduced. And, like Broadacre, The Radiant City was a style of garden city. More specifically it was a "city-in-the-park" plan, although Le Corbusier refers to it instead as a "City of Towers" (1970c).

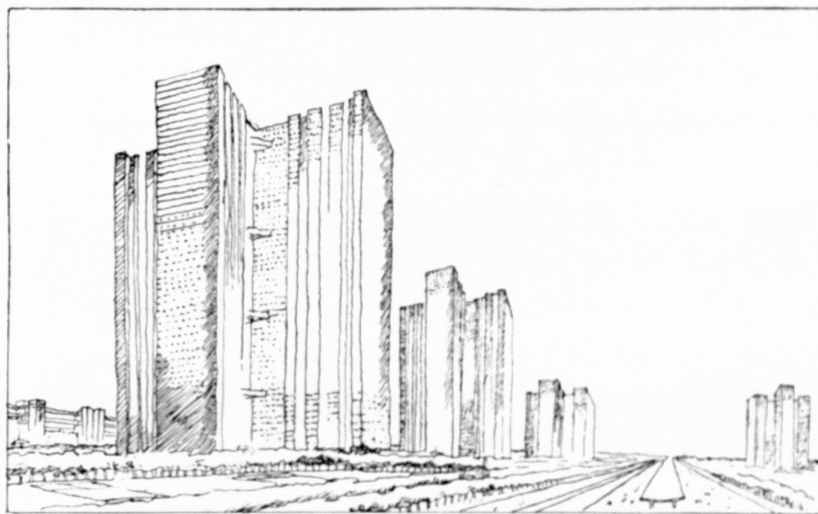


Figure 15. Illustration of the Radiant City from *Towards a New Architecture* (Corbusier, 1970c)

It utilized massive, highly compact, mass housing towers the could hold thousands of people at a time, in order to open up as much space on the ground as possible for equally enormous parks and gardens. Elevators and compacted apartments were designed to provide every comfort needed within a small, easily walkable distance (Corbusier, 1970c). In the Radiant City the roads float above the

ground, separating transportation from ground-bound pedestrian walking paths in order to create a safe and practical solution to the frequent harm automobiles may cause. Large swatches of natural parks and lawns are allowed due to the extreme density of the sixty story towers (1970c). While the population of a city was expected to increase, its actual foot print was designed to decrease with the implementation of the Radiant City.

For Le Corbusier's vision, standardization is key. Every program he delineated had a very specific place and footprint to fit into (1970c). Even nature had a specific time and place to exist in. Work and leisure spaces were purposefully separated in his attempt at perfecting the theory of form follows function. This was a constant theme in his work. Previous to the Radiant City Le Corbusier also designed a series of mass produced homes known as the Maison Citrohan and Maison Monol which took advantage of pre-fabrication ("Le Corbusier", 2015). In fact, during the earlier part of his career, Le Corbusier was well known as a utopian urban planner more-so than as an architect (Taylor, 2008). As early as 1915 he published writings and diagrams of utopian plans. As discussed in Chapter 1, Le Corbusier was in love with American engineering and technological advancements. The plan was the generator for Le Corbusier. Unlike Wright, the individual does not take precedence - rather the whole of society does.

The Radiant City was never put into practice. However Le Corbusier was able to showcase some of its functionality in later designed apartment blocks such as his famous Unite d'Habitation.

A point worth mentioning is that the utopian plans for both Broadacre City and Radiant City not only changed how daily life was laid out, but how the society was run. Wright very clearly stated the accompanied change of a much more socialist government in his writing on Broadacre City: "and government itself owned by the people of Broadacre City" (p.349). Like Wright, Le Corbusier made a political statement in his writings on the Radiant City. For example, he stated that housing would be assigned according to family size rather than economic status or the class each family belongs to. Both these utopian city plans have surprisingly similar goals, both structurally and environmentally. However, the method with which these goals were to be achieved differ vastly. Broadacre and the Radiant City take the idea of a garden city to the opposite extremes. Interestingly enough, each of them in a sense theorized how our world might look today. Le Corbusier dreamt of tall towering monoliths of concrete, steel and glass. Frank Lloyd Wright wished for the perfected suburban sprawl. While neither will ever be fully realized, it is clear that their conception and design left lasting footprints on the architecture and urbanization of the modern age.

There are two main reasons why utopias never evolve past the point of ideals and images. First, the whole concept of Utopia and of perfect society is

simply impossible. Perfection is an ideal impossible to reach (see footnote on page 94). Secondly, an idealized society is the suggestion of something static. As Fátima Vierira writes in “The Concept of Utopia”, utopias are societies which have reached perfection and therefore have nowhere else to go (2010, p.9). There is no continued history, no past or future. And, because of this they are static and that is something that will never exist in a constantly changing and dynamic world.

Heterotopia

Counter to Utopia is the concept of *Heterotopia* as proposed by Foucault in his essay “Of Other Spaces” originally published 1984 and based on a lecture given in 1967. A Heterotopia is defined by Foucault as a Place which has a physical presence, but contains part of every other part of that particular culture represented with in (1986, p.24). This causes them to be outside all places, even though they are rooted in physical reality. One example of a heterotopia given is that of a mirror. While a mirror is held in reality, it does not have any defining characteristic outside of itself. To be in front of a mirror, is to be somewhere else, in the mirror, while still being where you physically are. In this sense a mirror might also be categorized as a utopia, because as Foucault explains, a mirror also shows yourself a place which you cannot inhabit: the you in the mirror, because the space inside a mirror is not reality, and never truly can be called physical reality (1986, p.24).

Heterotopias can be divided into two main categories: those which are only for the privileged, sacred, or those forbidden to everyone outside a certain group, and those created to house and watch people who deviate outside a standard social norm (1986, p.24). Examples of heterotopias can be found in places such as airports, prisons, boarding schools, and malls. While these places can all be inhabited, when a person is inhabiting that space, everything outside of it disappears. Once inside the airport, contact with the unique aspects that create Place — as apposed to simply existing in space — are severed. Being in an airport means that an inhabitant could be in any number of countries and any number of cities. The same can be said of any of the other examples, with prison being perhaps the most extreme since even the ability to enter or exit is heavily guarded and specifically defined. Once inside there is a total lack of an outside connection or presence.

Paper Architecture

The term “paper architect” has a rather strong stigma. It is often used to refer to architects who design impractical or impossible buildings which never get farther then plans on paper (hence the term). However, “paper architecture” is not limited to this negative stigma. The design of currently impossible or improbable architecture is neither wasteful nor a mark of incompetence. Fanciful design is the basis for progress and it is the very starting mark of most architect’s education. While in studio classes, real world constraints are often ignored or only

roughly estimated. Modern design tools, particularly CAD and CAM⁹ software can allow for architects to imagine immense, complex structures that combine materials in ways that stretch the limits of physics.



Figure 16. René Magritte's *The Treachery of Images* (1929)

As the phrase “this is not a pipe” accompanied the image of a pipe in René Magritte’s *The Treachery of Images*, so could the statement of “this is not architecture” be applied to any representation of architecture, whether it has been built or stays rooted in paper (Rattenbury, 2002). In fact, what could be described as paper architecture is the basis for how architecture is both taught and designed. A building does not spring from the ground like a mechanical tree, it

⁹ CAD stands for “Computer Aided Design”, CAM equals the closely related phrase “Computer Aided Manufacturing”

is detailed and planned out in its entirety on paper, through sketches, renderings, plans, sections and more.

In architectural studios, students are given hypothetical sites and customers. They plan, design, draw and model a building which will never be actually built and through this they are taught how to detail out all the aspects which will eventually be applied to professional proposals. All architecture starts as paper architecture.

There are some architects throughout history who are the most well known for their un-built work. Two of these are Ledoux and Boullée, both French architects who practiced in the mid-to-late 1700s (Kaufmann, 1952). They tended to design within different categories from each other. Ledoux is remembered for his series of specialized houses, while Boullée designed monuments and public buildings at immense scales. Boullée and Ledoux were largely ignored by the architectural community until the 1950s (Kaufmann, 1952).

Ledoux

Ledoux himself was a utopian planner as well as an architect. Claude-Nicholas Ledoux was an extremely prolific architect from 1762-1788 before the French Revolution cut his career short. Over eighty buildings around Paris could be attributed to his name. These included multiple chateaux, pavilions, and perhaps

the most famous, his forty variations on triangles, circles, and crosses which are his royal toll booths (Kaufmann, 1952). His close connection to both the aristocracy and the monarchy tied his reputation to the falling old regime during the French Revolution. A man who was originally considered an oddball genius became an architectural villain (Vidler, 1990). Today less than ten of his projects still survive in Paris. Those toll booths and his utopian plan Saltworks are his most well known physical designs today. Although Ledoux was probably the most prolific architect of his time, and the premier French architect before the Revolution (Vidler, 1990), today he is much more widely known for his designs and etchings surrounding simplistic and exaggerated houses. Most of Ledoux's work is comprised of very basic geometrical volumes. The emphasis of the massing is on volume, light, and shadow (Kaufmann, 1952). His River House and Spherical House both demonstrate his common use of micro-telescopic lenses which allowed him to enlarge details and turn them into the most prominent features (Kaufmann, 1952). Each house was very simple and planned to be built in a way as to emphasize the single characteristic called out in its name.

There were originally two different plans for Ledoux's utopian Saltworks. Only the second scheme was built. Called Arc-et-Senans, the half circle design was later planned out into a full circle and beyond as part of what Ledoux titled the City of Chaux (Gruson, 2008). The City of Chaux was designed as a utopian industrial city. The Saltworks themselves were originally conceived as a utopian design in the most physical sense, while the City of Chaux extended into the social

and political ideals as well (Gruson, 2008; Vidler, 1990). However, the Saltworks themselves were conceived of, then built as a practical series of structures. They were successfully used for their intended purpose, although they were later abandoned until the 1970s when the structures were bought and preserved by a historical foundation.

Boullée

Boullée lived in Paris from 1728 until his death in 1799. He was originally educated as a painter (which he loved), but was later forced into architecture by his father (Kaufmann, 1952). He began teaching at age 18, and while he often submitted projects, almost all his early work was rejected with the contracts going to competitors. The 1780s were his most prolific time. The Bibliothèque Nationale was the project he considered his most important work although it was never built (Rosenau, 1976) . In 1795 Boullée became part of the new Institut de France and he often participated in the Academy, which was the highest building order in France. This led to his work circulating far wider through the influence of his students and his own involvement in assessing prizes given out by the Academy (Kaufmann, 1952). Today, Boullée is most known for his designs surrounding extreme monuments such as his Cenotaph for Newton. Boullée often represented his work in dream-like images and used these as an outlet for his love of painting (Rosenau, 1976) . The Cenotaph for Newton was designed on a colossal scale but follows a few simple principles. For this cenotaph a single sphere is raised on a

monumental podium. Trees line the twisting path up to reach the interior. His images are ink and wash, the emphasis on shadows, as can be seen in particular in his night iteration. The interior is presented as opposite to the time on the exterior. During the day, the sunlight filters through tiny holes to simulate stars. And during the night, the day shines forth with a single bright light like the sun lighting up the interior out. The cenotaph is considered by some as Boullée's most iconic design.

In Emil Kaufmann's essay entitled "Three Revolutionary Architects" both Ledoux and Boullée are referred to as both forward thinking and progressive architects (1952). The author points out that often their impact on architecture has been overlooked due to the fact that almost no physical buildings remain of their work. It is necessary to look instead at other media such as illustrations, something that today would be considered in the realm of paper architecture.

Fantastical Architecture

Fantastical Architecture is not limited to architects nor is it limited to architectural essays and publications. The works of literary authors are littered with a diverse array of architectural projections as well as settings created specifically as purely fantastic Places. Some literary authors have also applied their pens to the creation of theories behind the fantasy. Two in particular make

intriguing case studies for this discussion of Fake Place. Italo Calvino, an Italian author who wrote many novels and essays just skirting the edge of architecture, and J. R. R. Tolkien, the now legendary author who created one of the most fully fleshed out and intricate realms between the covers of a book.

Calvino

Italo Calvino was a prolific writer on a range of subjects including theories on literature, folk tales, personal auto-biographical accounts, and Place. He is famous within architecture for his collection of inventive descriptions printed under the title *Invisible Cities*. *Invisible Cities* details a fictitious account of Marco Polo sharing the many impossible and bizarre cities he has travelled to with Kubla Khan (Calvino, 1974a). The story leads readers through over fifty fantastic cities all sorted depending on their dominate characteristics. Each city brought up is divided into a category based on its defining features. No single description of a city is long – most measuring only a single page or two in length – yet they are able to immerse the reader in extravagant and exaggerated cityscapes. Since its publication in 1974 *Invisible Cities* provides a critical look at cities and the urban environment. While each instance in the book is exaggerated, the problems and questions his writing brings up are very real.

Take for example the cities of Zenobia and Octavia – both part of the category that Calvino titled “Thin Cities”. These thin cities are defined almost

solely on their physical attributes. Zenobia is a city of buildings raised high on wooden legs in the middle of the desert (1974a, p.35). The vertical nature of the structures are only exaggerated more-so by overlapping bridges and ladders that connect the many levels. This verticality, while out of place in its desert home, creates a very distinctive context within the mind's eye. It also creates a history for the place, setting it in a time as well as a location. There was obviously some sort of phenomenon which had influenced the first builders of Zenobia's civilization that had long since gotten lost to the history of the region. Octavia is another extreme architectural phenomenon. Called by Marco Polo "the spider-web city" (1974a, p.75), Octavia is suspended between two haggard cliffs. The paths through the city consists of ropes, chains, and small wooden planks that double as the city's inverted foundations. Gardens swing like gondolas between rope ladders and houses like bags.

Invisible Cities was not Calvino's only foray into the discussion of setting and Place in the realm of literature. He also presented a lecture entitled "Levels of Reality in Literature" in a 1978 conference (Calvino, 1986b). In it, he discussed the difference between an author and the narrator of a story using Homer's *Odessey* to provide examples. He also expounded on the ability of language to create a link between those different realities. Calvino summed up his lecture with this statement: "literature does not recognize Reality as such, only levels" (1986b, p.120). This is an extremely important observation when discussing the place of literature in the field of architecture. The clarification between

multiple levels of reality create a solid basis on which to judge fake Places. It identifies them as something with merit while still creating a distinction between the physical and the fake.

Tolkien

There is good reason to bring up the works of J. R. R. Tolkien and his importance specifically in relation to Fake Place: his creation of Middle Earth. Tolkien became world famous for his series *The Lord of the Rings* and the well described world which it inhabits. His creation of Middle Earth is marked as the beginning of modern fantasy, and this fantasy contains particular features which can help to analysis the effect of Place. In Tolkien's world there are many amazing and distinctive people, places, and cultures unlike anything found in our globalized reality found, yet it is relatable to each person who reads or watches its many offshoots.

The discussion of movies and literature which take place in fantastical settings often describe the ability to believe in or mentally inhabit that place as "suspension of disbelief", however, Tolkien himself disliked the negative aspect of "suspension of disbelief" that is assumed for creating the fantastic. He instead described a positive "secondary belief" (Zettersten, 2011; Helms, 1976). This secondary belief proposes the creation of a new secondary world which can completely immerse the reader (or viewer) rather than forcing the reader to

consciously put aside their current belief in reality in order to adopt a temporary lack of disbelief. To create a believable world, it is first necessary to not force that conscious decision. This is accomplished by the creation of guiding rules which are strictly adhered to (Helms, 1976). They provide the building blocks which support the belief of the reader and allows the total immersion into a world that is truly desired. The secondary belief is initiated by the author acting as a sort of “sub-creator” (Helms, 1976, p.19). The mechanics for the world are designed with a strong footing in reality. In order for something to happen there is a system of give and take that occurs in any believable created Place. Randel Helm’s description in his writing about Tolkien puts this most eloquently. He states “within the laws of the forms, in realism action is limited, reaction infinite, in fantasy action is infinite, reaction limited” (1976, p.74).

This world, however fantastic, does not come from thin air. It was created through many tiny details taken from multiple cultures and events surrounding Tolkien. These influences included the countryside where he grew up, and dead and living languages such as Gothic, Finnish and Welsh. Tolkien himself was a linguist and held a vast interest in both code and language creation from a very early age (Zettersten, 2011). Each place of Tolkien’s Middle Earth world was developed around the languages he designed.

Middle Earth is an ideal example of how many nuances can be moulded into a cohesive whole which has the ability to relate to people of all nationalities and

walks of life. Something never done before can still be beautifully fleshed out and realistic. It can maintain a sense of connection with the audience because it includes something relatable. These are what Heterotopias lack, and why they can cause such a dissociation although they span the globe.

Conclusions

How we discuss architecture plays a large part in how we define architecture as well. Basing practice on two dimensional media gives those media the power to be called true architecture. While immaterial or impractical, they still hold a life of their own and the power to show both architecture and place in a forum of discussion. Structures that have never existed in three dimensional reality do not need to be held apart from those that have. Great accomplishments in architecture depend on how the design communicates its intentions to those who experience it far more than the media which it takes its form from.

Looking at the work of architects famous for both their built designs as well as their idealized theories shows just how important Place defines architecture in all its forms. Perhaps the architecture that is built can learn from that which was never produced. Paper Architecture, Fantastic Literature, Fake Place – no matter the name, immaterial design has its own place of importance in the field of Architecture. Utopia is a dream to aspire to, and Fake Places bring us one step closer to – impossible – realization within the field of architecture.

CONCLUSIONS PART II

The creation of Place is a necessary question to the relationship between architecture and place. Yet Places often are ignored or oversimplified in this discussion into merely their physical aspects or location. This section was based around three specific approaches to understanding and creating a Place. Through an increased awareness of Place creation I intend to demonstrate the interdependence of Place and architectural design, as well as discuss the process by which we discuss work produced in a place-conscious manner.

Defining a Place through its Culture

By discussion of a single specific Place, this chapter serves as a perspective on the many layers of interpretation even the smallest details can create. It also addresses the many different methods by which humans relate to their environment and the architecture which inhabits it. By delving deeper into how Place is created through its culture, a general overview of how Architecture responds to the many aspects of Place occurs. This takes particular interest in the aspects concerned with the actual inhabitation of a structure and how the ideas of symbols, textures, circulation and more all drive experience - both the most important and most elusive aspect of Place. The narrative of this chapter also looks at how the manipulation of architecture is directly tied to the site where it is located.

Atmosphere, Light, and the Senses

By shifting focus to only a few specific and interlocking elements, Chapter 4 was intended as a more in-depth look into a single aspect of what creates Place within architecture¹⁰. It is essential not to overlook the dramatic effect of any aspect, but the reason for *light* in particular being examined is twofold. First, light is a concept that overlaps both material and immaterial aspects. It can be measured and manipulated and yet it is still something that cannot be handled physically or contained. The second reason is that light is also a frequent topic in current architectural discussion. By looking at how it has been or could be addressed, the relationship between current practices and Place is more fully revealed.

Fake Places

The term *Fake Place* refers to the creation of fantastical or impossible places. Through a discussion of common practices in the field of architecture - such as designing for structures which are not created, and the presentation of material covering extreme designs, as well as the generation of utopias – this chapter examines the exact relationship between place and architecture outside

¹⁰ By looking at only one aspect of Place, this chapter serves as a foundation for future research. A complete understanding of how the aspects of Place can be manipulated throughout the design process would easily be the subject for a thesis on its own.

of physical location. By separating architecture from physical location, the importance of the six other main aspects of Place become apparent in the creation process within the field of architecture. The reason for also including topics such as paper architecture and literature references was to provide a normative foundation on which to basis further discussion on accepted practices within architecture.

III. PLACE REPRESENTATION

In the first two sections, the topics of Place definition and Place creation were the focus. In this last section, it is imperative to now review how Place is represented in the multitude of media architecture transverses. How an architectural subject is represented affects directly how it is discussed both by architects as well as outside the profession. By looking at a variety of media, a clear expectation for architecture will emerge. And, while some designs may be brought about in a method conducive to discussing the relationship of architecture and Place, how we discuss and portray architecture is an essential part of how we can modify our understanding of that relationship. If it is mis-represented, that dialogue can never be formed in the community at large.

According to the Merriam-Webster dictionary, the term *representation* means “something (such as a picture or symbol) that stands for something else” (nd). Representation is an extremely broad topic. What does representation mean in an architectural context? It is important to narrow this down in order to process the implications of media identified throughout the profession. Under the heading of Place Representation, the two overarching categories of word and form begin to emerge. Today, architectural discussion is very heavily visual, which begs the question: why study both word and form? With such heavy visual emphasis, most attention in university is based around the formation of a sequential and visual narrative. Specific points in each project are emphasized, and then become

the focus of intricate renderings. Representation is expected to provide those viewing it with an approximation of how the design — if built — would be situated in space and site. Yet, both word and form have been used to explain, categorize, share, and design in previous architectural theories. The interaction between these two typologies and the dichotomy that has grown in architecture between the two must be addressed.

The purpose of this section is to not only look at which media are used in current representational trends, but to also answer a specific set of questions. Should more emphasis be placed on certain media in today's profession? How can the most accurate representation method be achieved. What can the limitations of each media mean to both architecture and Place?

[6] ARCHITECTURAL WRITING

“An architect ought to be an educated man, so as to leave a more lasting remembrance in his treatises.”

— Vitruvius (Book I, Chap. I, part 4)

One of the most ignored yet decidedly prominent modes of representing architecture is writing. In current architectural practice — while studied in the form of texts for class discussion on theory or history textbook references — it is rarely discussed as a topic for its own merit or in the sense of practical application (Speaks, 1993). Most universities neither require nor offer architectural writing courses to their students (Henry, 1990). In studio, the focus of projects is on the plans, sections and renderings created to express each unique design.

Today, most architectural creations are judged according to their appearance first and foremost (Basyazici-Kulac and Ito-Alpturer, nd). How they are portrayed in media such as sketches and renderings are the tools used to discuss plans with clients. The media publishes photographs of monuments and cities. Contests for completely theoretical creations are won or lost - all based on the judgement of two dimensional media. It is immediately apparent how important the discussion of images are to the process of both designing and defining of Architecture. Yet, interestingly enough, drawing, perspectives, and other two dimensional media were not the original way with which architecture communicated. Rather, before the profession of architect was even distinguished

from that of a Master Builder, those interested in spreading their plans, thoughts, and comments on all things related to the design of buildings and urban spaces focused on the medium of the written and spoken word (Hicks, 1998).

The written word was the first architectural mode of representation because, originally written directions were more likely to make it through translations and hand-written copying than any other type of diagram or illustration (Hicks, 1998). Because there was no way to standardize the copies produced using this method, it was necessary to provide material least likely to be poorly re-copied. It was not until the advent of the Italian Renaissance, that anything more than the occasional illustrative diagram was used. In the late 1400s, architectural treatises became the first fully illustrated printed books (Hicks, 1998). However, even then the illustrations stayed purely technical in nature. They were merely extra information to help support and explain the already written full description.

Architectural Treatises

Architectural Treatises have always been a source to spread architectural theories and personal opinions. Since Vitruvius's *Ten Books on Architecture*, writing can be easily considered integral to architecture and has served numerous purposes, both implied and intended. Written dialogues have been used to provoke discussions, spread theories, justify new forms or materials, categorize and define

nearly any aspect of the profession, as well as promote the news of each accomplishment. Like all disciplines – in particular those that rely heavily on discourse and subjective examination – it is essential to spread ideas and to create an ever-increasing pool of knowledge from which each burgeoning generation can draw its inspiration. Both Le Corbusier and Frank Lloyd Wright are still well known for their prolific writing that twines around nearly all their physical – and fantastical – creations.

Vitruvius

Vitruvius's *Ten Books on Architecture* include ideas of not only the style of building, but also urban planning and layout, material suggestions, engineering, and many related topics (2007). Not only does he provide an insight into the building and thought processes of Rome, Vitruvius is the only author of a complete architectural treatise surviving until the revitalization of architecture during the Italian Renaissance. Because of this, his collection of writing has become the foundation on which western architectural theory was based (Hicks, 1998). The standards he set out were studied by many well known architects and the rules he laid out were for a long time closely followed for centuries. According to Vitruvius “architecture depends on Order, Arrangement, Eurythmy, Symmetry, Propriety, and Economy” (Book I, Chap. II, part 1). He extolled the virtues of the primitive hut as well as the potential for human proportion as a measurement standard in architecture. In Book III alone, he discusses the proper styles and proportions for

the use in temples – particularly Doric. Later in Book VI he discusses the proportion of rooms and the merits of symmetry (2007).

Vitruvius wrote his ten books in Latin, and to the despair of later translators, the wording was not always concise. However, as the sole source relating back to Roman architecture, his work sparked many new essays and collections of work. While some tried to hold onto this history with an iron grip, later during the Renaissance, others sought to expand and re-describe the ideal way of creating the world around them by architectural means.

The Architectural Renaissance

During the Renaissance architectural treatises were quite popular. While Vitruvius was the originator of the trend and the inspiration for many Renaissance treatise writers, his work lay relatively unnoticed until it was brought to the forefront by architects such as Leon Battista Alberti and Andrea Palladio (Hicks, 1998). Vitruvius soon became the leading source for architectural theory. Mathematical ideals such as symmetry and proportion can still be linked back to him in modern theory. Most architectural treatises from the Renaissance period were written by practicing architects, and they were written as a way of sharing practical information between professionals (Hicks, 1998). They were not for abstract theories or musings. Examples in the writings were most often from life, and most commonly from the author's own work. Illustrations were used as

technical diagrams to complement the writing, rather than taking precedence over the text (Hicks, 1998). Architectural treatises from this era created the basis for today's large pool of technical terms. While these writers were tracing the footsteps of Vitruvius, they also created words and descriptions specific to the field of architecture.

Alberti was the first to write a treatise following the style of Vitruvius, in his publication *De re aedificatoria*. *De re aedificatoria* is the perhaps the most similar to Vitruvius in chosen narrative style. Like Vitruvius, Alberti continued to push for the use of human proportion in architecture (Hicks, 1998). He also chose to mimic Vitruvius's ten books - dividing *De re aedificatoria* into ten segments - as well as Vitruvius's language of choice, Latin. While Alberti wrote in Latin to further relate to Vitruvius, most other treatise of the time diverged from his strict mimicry and were written in local languages, helping to update and spread the information extensively during the Renaissance (Hicks, 1998).

Along with a couple of the other early treatise writers, Alberti sought to explain the writings of Vitruvius for their professional audience. Alberti was trained in law, which might have been the reason for his writings were centered around "laws" of architecture. He also studied the ruins of ancient buildings, which were the only historic evidence available outside of Vitruvius (Hicks, 1998). Their new translations and explanations became the basis of architecture's specialized language and professional knowledge pool.

Architectural Essays

With the foundation of architectural writing and discussion somewhat standardized, the writing associated with architectural creation shifted away from Vitruvius and Alberti's educational and purely construction focused publications. In particular, around the turn of the 20th century architects such as Adolf Loos and Le Corbusier contributed to a trend of social commentary and less standardized content expectations – including an obvious shift towards the illustrative, visual, and cultural dimension.

Adolf Loos

Unlike the previous architectural treatises, in his collection of essays *Ornament and Crime*, Adolf Loos comments not only on architecture but also culture, education, furniture, fashion styles, and form. Loos was a strong believer in functionality and form. His title essay “Ornament and Crime” attacks the Baroque and Renaissance details still popular at that time. He argued that humanity had moved past a need for ornamentation, temporary fashion is impractical, and that objects of everyday use should be made to be enjoyed until they break down, not when they become unbearable in terms of taste (Loos, 1998a). This essay, first published in 1908, caused massive uproar in the applied arts community. The wide range of topics covered all relate back to design and the application or consumption of designed objects, however, very few are about

solely about architecture in nature (Loos, 1998a). They concerned living and environment – they concern Place. *Ornament and Crime* was not Adolf Loos's only collection of essays. *Spoken into the Void* covered a similar range of topics: the titles of his essays ranged from ladies' fashion to furniture to building materials. In his manuscripts Loos concerned himself with the whole world around him (Loos, 1982b).

Even at the time of Loos in the early 20th century, similarities between architectural publications and those of Vitruvius is perhaps an indication of how architecture was also still approached as an object imposed upon the land. Yet, while both Vitruvius and Alberti discuss topics outside the range of direct architectural construction, neither architect strayed far from exact methodologies or the fields directly surrounding building design (Hicks, 1998). Unlike either of these two previous examples, Loos introduced factors that are defined by the more immaterial – culture and society. His focus continued to stay on physical objects, but how he discussed their implications fell heavily into the perception and cultural dynamics surrounding their relationship to inhabitation and structure (Loos, 1998a).

Le Corbusier

The works of both Le Corbusier and Frank Lloyd Wright have been brought up many times throughout this thesis. In Chapter 1 a discussion of their individual

works demonstrates that both these early twentieth-century architects produced extended written publications to both promote and explain their avant-garde buildings. Public interaction helped define not only their relationship with the public but also the type of projects they could receive. Both Le Corbusier and Wright also wrote a variety of types of literature in relation to their work. Unlike those discussed above, they chose to stray from the confines of Vitruvian-like style of collected essays.

Take for example Le Corbusier's *Towards a New Architecture*. *Towards a New Architecture* is very much a book providing not only an argument for specific forms and functions in architecture but also the society and world view associated with them (Corbusier, 1970c). Le Corbusier is not simply spreading ideas about the good, the bad, and the ugly of architecture — he is working towards promoting his own unique conclusions. Compare this to his publication *The Chapel at Ronchamp*, published in conjunction with his building by the same name. *The Chapel at Ronchamp* is heavily illustrative. Nearly the entirety of the book consists of photographs which focus on small details and the atmosphere of inhabiting the space created (Corbusier, 1957b). What text there is, is often regulated to only the first couple pages of each chapter, or takes the form of handwritten excerpts worked around the photograph's layout. In contrast, *Towards a New Architecture*, while illustrative in nature, focuses instead on the text itself. The pictures and diagrams are meant as visualizations of the text, not explanations in themselves. Looking at the different focus of these two publications, it is clear that the heavy

shift from the mainly text heavy and much more classically formatted to mainly illustrative visuals cannot be described as a simple difference between subject matter. *The Chapel at Ronchamp* was published nearly thirty years after *Towards a New Architecture*, and the comparison reflects an extremely strong visual shift in architectural media¹¹.

Place and Word

While the previous section discussed a shift in form and format of architectural writing, this section discusses a shift in context. Unlike before, the two authors discussed below have changed the focus of their words to a more theoretical context. In particular, they consider the context of Place and architecture and the dichotomy created between them.

Christian Norberg-Schulz

Published in 1980, *Genius Loci* was one of the first texts to introduce the theory of phenomenology and directly linking it to architecture. Written by Christian Norberg-Schulz, this book became one of the primaries for modern architectural philosophy. His writing is cited in most sources pertaining to architectural phenomenology. As discussed in Chapter 4, phenomenology focuses on the process of experience when directed towards the subject of study. In terms

¹¹ This shift is dramatically increased within image based media in relation to architecture, therefore, this shift is more thoroughly covered within chapter seven.

of architecture, this translates to a high awareness of the context the structure occupies. While relating his descriptive examples to the physical and geographical context, Norberg-Schulz does not limit himself to only physical attributes. Rather, he assumes equal, if not greater, distinction based on the immaterial aspects. Norberg-Schulz refers to his divided concept of place with the subcategories of “space” and “character” (1980b, p11).

By introducing phenomenology in direct relationship to architecture he forever changed how the profession looked at both space and site. As shown in previous examples, architecture has long been designed with rather minimal concern to site. Vitruvius suggested specific orientations to streets and buildings based on superstitions, and material modifications based in simple availability and common sense (Polio, 2007). Architects such as Alberti were obsessed with symmetry and proportions and creating mathematically perfected spaces (Hicks, 1998). While they considered the context – a necessity given the often extremely crowded sites in which their work was built – their consideration of this was generally based in outside beliefs or the simple necessity for working within the parameters of any given location. Even Frank Lloyd Wright, who, in his writing on Broadacre City as well as his own aesthetics, called for a return to nature, designed a Utopian system to cover the entirety of the United States (Wright, 1935b). While the system does indeed respond to many of the environmental characteristics of the midwest, he did not cite any changes for expanding into other varied sites or cultures.

Genius Loci was also very much a theoretical publication. Unlike the writing of any of the architects mentioned above, Norberg-Schulz does not delve into examples of his specific work, nor does he focus on cultural or societal issues. The manner in which he writes instead addresses the thought process behind those ideas of creation (Norberg-Schulz, 1980b).

Peter Zumthor

While Christian Norbert-Schulz was one of the first architects to connect architecture with phenomenology, his own work often reflected the modernist principles with which he identified. Today, Peter Zumthor is one of the most well-known contemporary publishing architects, is a strong proponent of phenomenological-architectural thought. His writings often focus on his own design experience as well as the philosophy of phenomenology and tend towards being very theoretical or observational in nature. For example, in *Thinking Architecture*, Zumthor does not discuss his own architectural designs. Instead, he focuses on describing his own experiences and how they have affected his perception of the spaces and structures he has created (Zumthor, 1998b).

In the same book the opening chapter is titled “A Way of Looking at Things”. He begins with a description of a kitchen he remembers from childhood and how it has imprinted itself as the essence of *kitchen* in his mind (1998b, p.7). That is one

of the most important ideas behind Zumthor's writing. He explains this thoughts behind architecture in a very human way. His descriptions are based on interactions and memories. Both are intrinsic parts of everyday life which affect each and every person and their relationship to the structures they experience (Barash, 1997). This is often forgotten, ignored, or ill-explained within the field of architecture, and the fact that Zumthor has brought these aspects into his professional writing speaks for a shift towards recognizing their importance. However, Zumthor is the exception rather than the rule. He and his work stand out for the conscientious attitude he has shown towards further understanding of Place past the physicality of a particular site.

Written Expectations

Modern expectations for architectural writing are rarely discussed and even more rarely defined. When we discuss the 'language of architecture' it is with the connotation of space, form, function, and narrative. Rarely does it relate to the spoken or written word in its most literal sense (Weinstein, 2008). In the university, while written statements are occasionally requested, and narrative is expected to accompany a project, the application seldom continues further than hasty scribbles pasted to presentation boards. This does not mean that young architects are professionally illiterate. However, there is a strong case to say they are literature deficient (Mitrović; 2013; Weinstein, 2008). The push toward narrative that Branko Mitrović brings critical attention to in *Visuality for*

Architects has, perhaps surprisingly, had a negative effect on the relationship of word and form (Mitrović, 2013). Discussion is pushed towards specific points in that narrative rather than focusing on the subject itself. Explanations of designs, concepts and forms turn away from critical review of these aspects in their totality. Mitrović argues that even authors such as Christian Norberg-Schulz have perpetuated the lack of true discussion of form and space within architecture by promoting this narration of scheme (2013). And in one way, this is remarkably accurate. However, the concept of phenomenology which Norberg-Schulz uses as his theoretical basis can and should be discussed as a legitimate methodology for architectural description and rendering. As discussed previously, the concept of phenomenology is founded in the knowledge of both immaterial and material qualities which form some of the key foci of defining architectural Place.

Conclusions

It is clear that written description and explanation are — and always have been — an important part of the architectural profession. Writing is a medium with which we can express ourselves with little to no translation, and yet, it is an almost invisible medium today. This has been brought on not only by simple evolution in the architectural profession over time, but also by a knowledgeable push away from explanation and towards narration. Narration in and of itself is not intrinsically negative, however, by focusing solely on the moments within architecture that form a single narration it becomes easy to overlook the other

necessary aspects of a larger picture. Today, much of the architectural information the average person receives is through media is not written or described by architects themselves. The idea of the spectacle is more prominent than ever before in our modern consumer culture. If narration stays the focus of architectural discussion, it becomes impossible to break the attachment between the spectacle and the structure. Architecture is deeply linked to its formal and spatial presence as well as its atmosphere. Just as a visit to a structure must encompass the totality around it, how architecture is represented within its media must reflect that totality as well. This calls for a shift in the portrayal of architecture in written word.

[7] IMAGES AND REPRESENTATION¹²

While the numerous media forms which can be gathered under the heading “images” were not the first representational style of architecture, they are some of the most potent. The importance of images can be described in part by the simple power which some hold. Iconic images alone can tell a complex architectural history. In the case of some Fake Places, images form the only relics of existence. Projects designed for competitions or in a purely theoretical line of thought are often represented in the lines of an image without hope of ever gaining physical form. Humans, as previously discussed, are extremely visually-dominant creatures. There is a reason why the common saying “a picture is worth a thousand words” exists. The number of representations which fall under the category of “images” are vast in nature, so it would be appropriate to focus attention on only a few of those which have caused the most change within the field of architecture and those that are the most relevant in today’s practice.

Visual Culture

As mentioned in Chapter 4, humans are very visual creatures. We have adapted to rely so heavily on our visual perception that other senses can be ignored or overwritten in favor of what our visual perception is telling our mind is

¹² Any of the media discussed within this chapter could easily be the focus of their own chapter with ease. Thus, they have been discussed within this writing with less depth in order to provide a foundation for comparison and a critical look at their impact on both architecture and Place through a generalized view point.

true. However, this also mean that we can easily be deceived or tricked into certain assumptions depending on how our environment is presented to us (Pick, 1969). Architecture, unsurprisingly, relies very heavily on perception of where we are and the atmosphere of that place. For better or worse, human visual reliance also translates into the media that is used to represent architecture and that of the environment around it. How architecture is visually represented is therefore of great importance to how we perceive and experience Architectural Place.

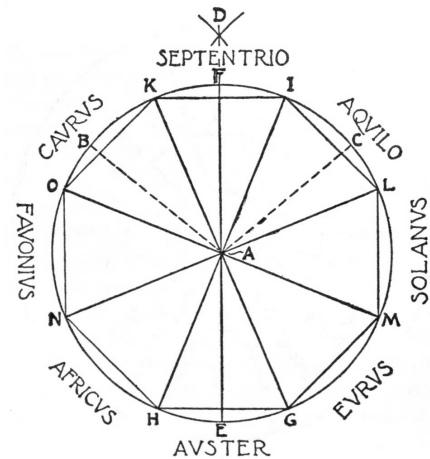
Within Architecture the perception of any space is drastically affected by many different things such as lighting, color, and materiality – to name only a few – with all of the information filtered through the five senses (Crisman, nd). All five senses are constantly feeding data to the brain but the majority of our perception of a space is heavily skewed toward the information received from visual and optical stimuli in particular (Posner, 1976; Rock, Irvin, and Victor, 1964). At the other end of the spectrum is taste, which while constantly present, is often easily ignored outside of activities which focus attention around it, such as eating. Smell is also a lower ranked sense because it can be overruled by data from other sources, and tends to have a more constant but shallow presence . It's more likely we will notice smell if there is a drastic change in it – in particular if there is a dramatic increase in a negative or very strongly scented odor.

This skew is only true for current or real-time perception, however. The way a Place is remembered in memories often ties to senses other than the visual

(Barash, 1997; Russell, 2005) . Some of these instances are almost universal for the human race. For example, the feeling of nostalgia or “home” that comes with smelling certain foods; or when important events are tied to a specific sound or often a particular song. In many western weddings specific songs are played when the bride first comes down the aisle as well as a more personalized selection used for the first dance in the reception – both these musical pieces become tied specifically to these memories. Conrad Russell suggests in his article that memory itself is “fictive”, created by the human mind by selecting specific sensory information (2005). This does not mean that memories are *false* but rather that they are a specific narrative about events and time rather than an uninformed simplistic capture of the events or time. Gaston Bachelard reasons that sense-specific memories break up time in order to create meaning in the present (Russell, 2005). These time-based breaks are the mark of creation which, in a larger picture, can divide up stages of human evolution/production. This theory suggests one solution to the question of why people remember certain things as opposed to others, and why not all our senses are equally represented at any given point in time. Knowing which senses tend to dominate and what can break through other stimuli leads to the interesting question of how can the senses be manipulated? And how can this manipulation lead to the creation of a particular atmosphere?

A Flat Perspective

When images first started being used as a method of representing and describing architecture, the types of images were very standardly two dimensional. Some of the earliest representations of architecture are the woven rugs traditional to many Eastern cultures (Smith, 2012). Garden plans depict symbolic representations of the world and the many important spiritual and physical places that formed their understanding.



In early architectural treatise, images were rarely used. Text was relied upon as the

Figure 17. Wind diagram from Vitruvius's *Ten Books on Architecture* (Book I, Chap. VI)

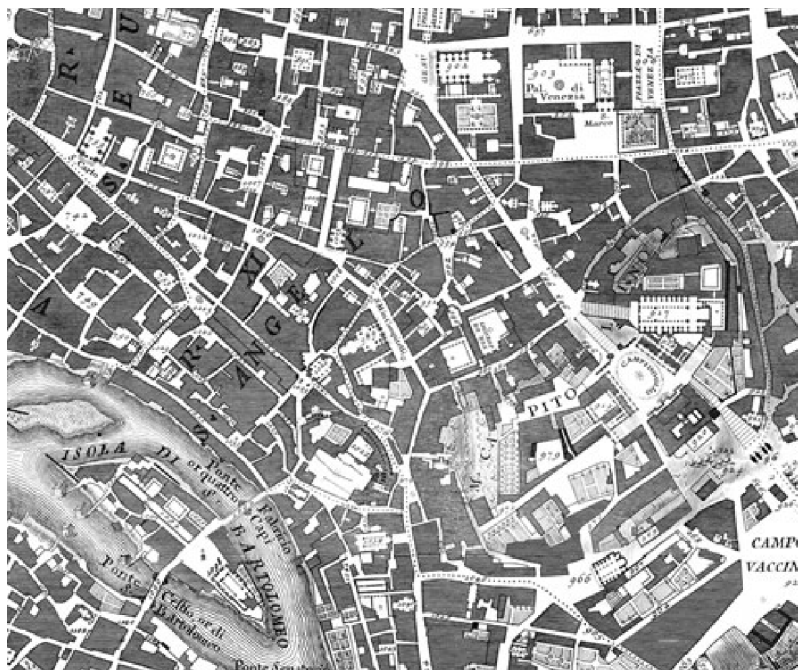


Figure 18. Part of Noli's figure-ground map of Rome (Noli, nd)

sole medium to convey and educate. Slowly the addition of diagrams which were easy to copy and simple to understand, began to supplement architectural treatises. In contemporary architectural practice, flat diagrammatic images are still the majority (Bassler, 2008; Yee, 2007).

The Image as Distortion

The idea of distortion in architectural media is not only common, but almost impossible to avoid. Long before perspective was introduced, the Greek designed their temples and public buildings with mathematical precision to *appear* perfectly straight when fading into the distance. Steps and platforms often had curves and slight bulges that transformed, when seen in perspective into a precise line. Yet, originally, the visual representations of architecture were not dynamic, but flat, two dimensional, and diagrammatic in nature.

Trompe l'Oeil

The phrase *trompe l'oeil* translates as “trick of the eye”. Used in many design fields, trompe l'oeil is the creation of optical illusions. It has been used in architectural design with one of the most famous examples being Borromini's foreshortened corridor in Palazzo Spada. While quite short in reality, by physically changing the size and spacing of the columns along the length, the eye is fooled into believing it to be much longer. Even the statue at the end of the space is

dramatically reduced in size as well as elevated so it appears to recede into the background. Trompe l'oeil is also a technique commonly used in painting and frescos – also popular during the Renaissance as seen in the many villas built during that period of architectural evolution (Mitrović, 2013). By creating realistic extensions of space on flat surfaces, the entire experience changes. The exterior seemed to naturally flow into the interior of buildings, while the views naturally flowed to the imagined scenes outside. Not only was it a sign of wealth and status to have these rich scenes commissioned for a villa or palazzo, but they also provided a completely different atmosphere which both brightened and opened up what could otherwise have been a cramped and much less appealing space to spend any sort of time in (Mitrović, 2013).



Figure 19. Ruins of Hadrian's Villa by Giovanni Battista Piranesi (1770)

While Piranesi is referenced mainly for his sketches and etchings, his work easily fits under the idea of trompe l'oeil. Piranesi created a whole series depicting the ruins of the Roman forum (Piranesi, 1975). Each scene creates an exaggerated and romanticized view with overblown proportions. Take for example, his series of etchings from his Hadrian's villa series.

The etching on the previous page describes to the viewer an idyllic scene with exaggerated vegetation, dramatic lighting and ruins crumbling away in the most ideal fashion. While the scene itself is not totally unrealistic, the exaggerated atmosphere produces a beautiful but deceiving interpretation. His other illustrations exhibit very similar traits. Often they are populated by small figures, vastly dwarfed by the ruins spread around them, sitting on great slabs of rock or basking in the brilliant light shining through a partly destroyed archway (Piranesi, 1975). The levels of texture and the high contrast create a feeling of depth and progression through space. Members of the European upperclass would visit Rome on their tours, expecting to see Piranesi's ruins, only to find something much less romanticized.

Perspective

While not directly a form of distortion, perspective often reveals tweaks and slight alterations to present the most ideal version of reality. It also tends to show views either impossible or unlikely due to field of depth, or vastly

exaggerated angles. Perspective was not introduced into image creation until the Italian Renaissance. While the progression of space was of particular importance to many influential buildings, it took some time before perspective images were introduced into the field of architecture. Today, perspective is one of the most common methods of sharing experience outside of the architectural field. It is also of extreme importance to the field itself, and is one the the standard image types shown to clients and coworkers during the designing process. Perspective is considered a type of image rather than a medium in and of itself. This means that perspective often includes both photography and rendering dependent on the subject.

Reality as 2D

While diagrams such as plans and sections are second nature in the architectural profession today, as mentioned earlier, they are far from being the only methods. More and more, modern technology has made it possible to get closer to the physical experience of Place while in a two-dimensional setting. Architecture, like so many other things, can digitally be shared almost instantly and looked at from almost every angle, regardless of how the architect designed it to be experienced. Photography and digital renderings have become the two most popular media for showcasing architectural designs – both physical and fantastic.

Photography

The media of photography introduced a revolutionary view of architecture. No longer did it have to be physically visited in order to experience the structure in three dimensions¹³. Unlike perspective illustrations, which also show a depth of field, photography began as a media which could show the reality of a space like no medium before it. However, regardless of the pros or cons, photography is no longer the pure media it originated as. Today most photography is manipulated through a multitude of means, such as erasing objects or structures around the photographed design and manipulating the shape or orientation of any given objects within the scene (Harris, 1998; Kopelow, 2011). It is easily possible to composite impossible perspectives or distort views to give a semblance of perfection in a way we could never otherwise view a particular space or building. Photography takes away our ability to appreciate the sheer size of some structures because it creates impossible views from extreme angles floating high in the air, level with a mega-skyscraper, or low, low down in the tiny niches even mice would never fit in. In his book *The Prodigious Builders* (1981), Bernard Rudofsky provides the most elegant description:

“In pre-Kodak days the traveler would linger over the object of his interest and, if blessed with a spot of talent, commit his impressions, optical and emotional, to paper or to canvas. Although the camera saves him such time-consuming exercises, the photographic image rarely measures up to the inspired drawing. Absorbed in the camera’s mechanics, the eye remains unfocused, the mind uninstructed, the heart untouched.” (p.18)

¹³ Photography also paved the way for the introduction of cinema and the ability to completely experience a structure or Place as if there. This, however, is a completely different medium from photography today, with a diverse range of case studies and topics all its own. Regretfully discussion of it must be left for another day.

Never has this sentiment been more true than today. The way in which photographs are consumed in current culture only aggravates the common assumption of full truth behind them. Photographs are some of the most commonly re-touched images associated with architecture or Place. This leads to the question: why use photography at all if it is considered such a loose medium? The answer to this is simple, for all its gullibility, photography is still an essential tool for the distribution of architectural media. The field itself has developed to the point where professionals train specifically to photograph the subject of architecture (Harris, 1998). Even this thesis relies heavily on the influence of photography to showcase the descriptions brought about in the text.

Putting aside the malleability of photographs through digital means, photography is one of the media in architecture most suited to describing or capturing Place. In part, this is due to the necessity of a physical subject to photograph. It is also able to capture light, visual texture, and materiality, as well as field of depth which translates into space in 2D representations. In addition, because of its reliance on physicality, anything being photographed will – to at least some extent – be contrasted directly with its immediate surroundings, leading to an insight into both proportion and size unless specifically manipulated to deceive. It is for these reasons that the widespread nature of architectural photography can be promoted. In photography Place is referenced with far greater assurance than most other architectural media.

Rendering

In recent years, rendering has become one of the most heavily relied upon media for sharing architectural designs inside and outside of the profession. Unlike many of the more traditional media, rendering is created to understand the intangible aspects of a design instead of the exact physical interplay of proportions or volumes. Unlike photography, rendering seldom expresses the spaces of an existing structure. Instead, most renders rely on CAD and CAM programs such as AutoCAD, Revit, 3Ds Max and Solidworks. These programs are based on the creation of three dimensional models. Similar to photographs, renderings usually serve the purpose of promoting the *experience* of the design they present. They add a level of visual materiality and spatial dimensioning to most traditional methods of two-dimensional representation. Unlike photographs, rendering is mostly used to create Places and structures that have not been built in physicality yet.

However, the most recent advances of the digital revolution have affected methods of 3D representation as well. For example in the creation of physical models, the use of vector-based programs such as Adobe Illustrator can be used in tandem with laser cutters to create extremely detailed models from a variety of materials including acrylic, bass wood, chipboard and more. And recently, modeling programs such as Solidworks can be used in combination with 3D printers

to create fully realized models based on complex masses with interlocking or merging forms that would have previously been nearly impossible.

The subject of rendering has evolved past its relationship with architecture, making it difficult to pin down precisely. The fluidity with which it can produce images, makes rendering an ideal medium to show the many aspects of Place, however, unlike any physical creation, it can also be created in the absence of Place — often as an act of carelessness.

Conclusions

While there is no doubt that many different media and image types hold important roles in architectural discussion, how do they all fit into the discussion of Place as well? Each shows a different part of what Place means in relationship to architecture, and each — in its own way — can distort our perception of such. Humans are very visual creatures, and as such we rely on images to express our thoughts or experiences. Images are often the most important and relied-upon method of transmitting concepts in current architectural practice. They have picked up the conversation where previously text and language held control. However, it is often overlooked that images are easily manipulated to produce an altered version of reality. This is not necessarily negative, but must be taken into account. In fact, this vulnerability was one of the deciding factors in choosing text as the foremost method of description of early architectural practice, although

modern production has for the most part made up for that difference in terms of copying and distribution. The most diagrammatic and purely structural methods of representation have survived within the field of architecture the longest.

CONCLUSIONS PART III

This final section specifically focuses on how the relationship between Architecture and Place is expressed through the many media which have become integral to the architectural field. The goal was to provide a broad look at the current condition of Place. By reviewing these different media and the aspects they are often used to justify, a critical analysis of how we present and discuss Place can be found. As discussed, how Place is represented in architecture has become a critical problem discussed This begs the question: now what?

Architectural Writing

Chapter six holds a discussion on the perception of both Place and Architecture through the written word. Writing is one of the oldest forms of sharing knowledge. It provided expression of thoughts and ideals long before we started to focus on the perceived image instead. Today, writing is a part of the architectural field often pushed aside. While it has not died, it receives very little general discussion outside of theory-specific class study. Architecture has not always been tied to Place with the same intentional care theorists such as Peter Zumthor or Christian Norberg-Schulz expound upon.

Images

Architecture is most often shared through the use of images, whether this occurs in discussions between of architects and clients, tourists' photographs, or the cover images for architectural magazines and websites. Humans are visual creatures, and that love of visual stimulation extends to the field of architecture. Therefore, how Place is depicted in architectural media has a dramatic effect on how Place is perceived in relation to architecture, and it's importance in the field. Most images of architecture can be divided into two categories: first are those that are limited, and showing only specific, often technical, information such as plans or sections, and second are the images and media which are often exaggerated, cropped, or otherwise manipulated to show their subject in a particular light. This is not to say that architecture is poorly represented within its variety of media, however, Place often is. This is a problem. Those characteristics reliant on Place need to be handled with the seriousness their contribution deserves.

FINAL THOUGHTS

While the history of Place and Architecture is by no means united, Place and Architecture have always been intrinsically bound. Often architecture is discussed with the addition of site. A site is the physical surroundings which ground a design, and in the context of this thesis I have described it under the slightly more controlled name of *space*. A site is something which is overwritten or altered by architecture. A Place is what is created within the discussion between architecture and site. Oftentimes space is confused as *place* in architectural discussions, however, the physical location of a building is only one influence on its creation. Other tangible as well as intangible aspects are essential building blocks in the design and discussion of architectural Place.

By dividing my inquiry into three main categories of *What is Place?*, *How do we create Place?*, and *How do we spread the knowledge of Places?* my intention was to provide a solid basis which can then be expanded upon. How we describe Place changes how we describe architecture. By going over a wide range of case studies and sources it becomes clear that our current definition of Place is lacking. Place is a part of architecture that is often ignored or over-simplified down to mere space. This is a sad mis-calculation which has led to a globalization of uninteresting and homogenized, heterotopic boxes. Each Place is important and every setting unique. Designs must be composed to fit their particular locale and to do this we must first understand Place.

In the introduction to Chapter 1, I stated the final goal as the creation of a completely original place without a physical reality. After this research, I no longer believe it is possible to create a Place which is without precedent. The reason that humans are so adapted to the idea of Place and the differentiation between Places both large and minuscule, is because these places are relatable in some manner. This does not excuse the creation of a single architectural style or a total globalization of steel and glass skyscrapers. Design must relate to all seven attributes of Place: space, mass, material, time, atmosphere, occupation, and experience. While each Place must have a solid foundation in some reality, not all seven pieces need to be firmly grounded. Experimentation can lead to new and wonderful translations which allow for a global understanding without the creation of dead architecture like the modern heterotopias. A lack of Place-awareness leads to the creation of under-utilized and often unsustainable architecture. However, attention to Place equates to unique, functional, and beautiful architecture.

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